

For the reasons set out in the preamble, title 40, chapter I of the Code of Federal Regulations is amended as follows:

## **PART 90—CONTROL OF EMISSIONS FROM NONROAD SPARK-IGNITION ENGINES**

1. The authority citation for part 90 continues to read as follows:

**Authority:** Sections 203, 204, 205, 206, 207, 208, 209, 213, 215, 216, and 301(a) of the Clean Air Act, as amended (42 U.S.C. 7522, 7523, 7524, 7525, 7541, 7542, 7543, 7547, 7549, 7550, and 7601(a)).

### **Subpart A - General**

2. Section 90.1 is amended by removing the period at the end of paragraph (b)(5)(iv) and by adding a semicolon in its place and adding paragraphs (b)(6) and (d) and by revising paragraph (c) to read as follows:

#### **§90.1 Applicability.**

\* \* \* \* \*

(b) \* \* \*

(6) Engines that are used exclusively in emergency and rescue equipment where no

certified engines are available to power the equipment safely and practically, but not including generators, alternators, compressors or pumps used to provide remote power to a rescue tool.

The equipment manufacturer bears the responsibility to ascertain on an annual basis and maintain documentation available to the Administrator that no appropriate certified engine is available from any source.

(c) Engines subject to the provisions of this subpart are also subject to the provisions found in subparts B through M of this part, except that subparts C, H, and M of this part apply only to Phase 2 engines as defined in this subpart.

(d) Certain text in this part is identified as pertaining to Phase 1 or Phase 2 engines. Such text pertains only to engines of the specified Phase. If no indication of Phase is given, the text pertains to all engines, regardless of Phase.

3. Section 90.3 is amended by adding the following definitions in alphabetical order to read as follows:

**§ 90.3 Definitions.**

\* \* \* \* \*

*Aftertreatment* means the passage of exhaust gases through a device or system such as a catalyst whose purpose is to chemically alter the gases prior to their release to the atmosphere.

\* \* \* \* \*

*DF* or *df* means deterioration factor.

*Eligible production* or *U.S. production* means Phase 2 engines produced for purposes of being used in the United States, and includes any engine exported and subsequently imported in a new piece of equipment, but excludes any engine introduced into commerce, by itself or in a piece of equipment, for use in a state that has established its own emission requirements applicable to such engines pursuant to a waiver granted by EPA under section 209(e) of the Clean Air Act.

*Equipment manufacturer* means a manufacturer of equipment using engines covered by the provisions of this Part who does not also manufacture engines covered by the provisions of this Part.

\* \* \* \* \*

*Family Emission Limit* or *FEL* means an emission level that is declared by the manufacturer to serve in lieu of an emission standard for the purposes of certification, production line testing, and Selective Enforcement Auditing for engines participating in the averaging, banking and trading program. A declared FEL will also serve in lieu of an emission standard where the manufacturer elects to perform voluntary in-use testing under this part. An FEL must be expressed to the same number of decimal places as the applicable emission standard.

\* \* \* \* \*

*HC+NO<sub>x</sub>* means total hydrocarbons plus oxides of nitrogen.

\* \* \* \* \*

*New Class I engine family* means any group of engines that employ a design that is different from engine families that the engine manufacturer has previously certified, and does not include any engine family certified on the basis of carryover data or any engine family that differs from another engine family solely as a result of a running change.

*NMHC+NO<sub>x</sub>* means nonmethane hydrocarbons plus oxides of nitrogen.

\* \* \* \* \*

*Overhead valve engine* means an otto-cycle, four stroke engine in which the intake and exhaust valves are located above the combustion chamber within the cylinder head. Such engines are sometimes referred to as "valve-in-head" engines.

*Phase 1 engine* means any handheld or nonhandheld engine, that was produced under a certificate of conformity issued under the regulations in this part to the standard levels defined for Phase 1.

*Phase 2 engine* means any nonhandheld engine that was produced under a certificate of conformity under the regulations in this Part to the standards defined for Phase 2 engines.

\* \* \* \* \*

*Round, rounded or rounding* means, unless otherwise specified, that numbers will be rounded according to ASTM-E29-93a, which is incorporated by reference in this part pursuant to §90.7.

\* \* \* \* \*

*Side valve engine* means an otto-cycle, four stroke engine in which the intake and exhaust valves are located to the side of the cylinder, not within the cylinder head. Such engines are sometimes referred to as "L-head" engines.

*Small volume engine family* means any nonhandheld engine family whose eligible production in a given model year are projected at the time of certification to be no more than 5,000 engines.

*Small volume engine manufacturer* means, for nonhandheld engines, any engine manufacturer whose total eligible production of nonhandheld engines are projected at the time of certification of a given model year to be no more than 10,000 nonhandheld engines.

*Small volume equipment manufacturer* means, for nonhandheld equipment, any equipment manufacturer whose production of nonhandheld equipment subject to regulation under this part or powered by engines regulated under this part, does not exceed 5,000 pieces for a given model year or annual production period excluding that equipment intended for introduction into commerce for use in a state that has established its own emission requirements applicable to such equipment or engines in such equipment, pursuant to a waiver granted by EPA under section 209(e) of the Clean Air Act.

*Small volume equipment model* means, for nonhandheld equipment, any unique model of equipment whose production subject to regulations under this part or powered by engines regulated under this part, does not exceed 500 pieces for a given model year or annual production period excluding that equipment intended for introduction into commerce for use in a state that has established its own emission requirements applicable to such equipment or engines in such equipment, pursuant to a waiver granted by EPA under section 209(e) of the Clean Air Act.

\* \* \* \* \*

## Subpart B -- Emission Standards and Certification Provisions

4. Section 90.103 is amended by revising paragraph (a) introductory text, and paragraphs (a)(3) and (a)(5) and by adding paragraphs (a)(6) through (a)(8) to read as follows:

### §90.103 Exhaust emission standards.

(a) Exhaust emissions for new Phase 1 and Phase 2 nonroad spark ignition engines at or below 19 kilowatts (kW), shall not exceed the following levels. Throughout this part, NMHC+NO<sub>x</sub> standards are applicable only to natural gas fueled engines at the option of the manufacturer, in lieu of HC+NO<sub>x</sub> standards.

TABLE 1 Phase 1 Exhaust Emission Standards

(grams per kilowatt-hour)

Engine Displacement Class	Hydrocarbons + Oxides of Nitrogen (HC+NO <sub>x</sub> )	Hydrocarbons	Carbon Monoxide	Oxides of Nitrogen (NO <sub>x</sub> )
I	16.1	--	519	--
II	13.4	--	519	--
III	--	295	805	5.36
IV	--	241	805	5.36

Engine Displacement Class	Hydrocarbons + Oxides of Nitrogen (HC+NO <sub>x</sub> )	Hydrocarbons	Carbon Monoxide	Oxides of Nitrogen (NO <sub>x</sub> )
V	--	161	603	5.36



TABLE 2 Phase 2 Class I Engine Exhaust Emission Standards  
(grams per kilowatt-hour)

Engine Class	HC+NO <sub>x</sub>	NMHC + NO <sub>x</sub>	CO	Effective Date
I	16.1	<b>14.8</b>	610	August 1, 2007; in addition, any Class I engine family initially produced on or after August 1, 2003 must meet the Phase 2 Class I standards before they may be introduced into commerce.

TABLE 3 Phase 2 Class II Engine Exhaust Emission Standards by Model Year  
(grams per kilowatt-hour)

Model Year						
Engine Class	Emission Requirement	2001	2002	2003	2004	2005 and later
II	HC +NO <sub>x</sub>	18.0	16.6	15.0	13.6	12.1
	NMHC + NO <sub>x</sub>	16.7	15.3	14.0	12.7	11.3
	CO	610	610	610	610	610

\* \* \* \* \*

(3) Notwithstanding paragraph (a)(2) of this section, two stroke engines used to power lawnmowers or other nonhandheld equipment may meet Phase 1 Class III, IV or V standards and requirements, as appropriate, through model year 2002 subject to the provisions of § 90.107(e), (f) and (h). Such engines shall not be included in any computations of Phase 2 averaging, banking, or trading credits or eligible production.

\* \* \* \* \*

(5) Notwithstanding paragraph (a)(2) of this section, engines used exclusively to power products which are used exclusively in wintertime, such as snowthrowers and ice augers, at the option of the engine manufacturer, need not certify to or comply with standards regulating emissions of HC, NO<sub>x</sub>, HC+NO<sub>x</sub> or NMHC+NO<sub>x</sub>, as applicable. If the manufacturer exercises the option to certify to standards regulating such emissions, such engines must meet such standards. If the engine is to be used in any equipment or vehicle other than an exclusively wintertime product such as a snowthrower or ice auger, it must be certified to the applicable standard regulating emissions of HC, NO<sub>x</sub>, HC+NO<sub>x</sub> or NMHC+NO<sub>x</sub> as applicable.

(6) In lieu of certifying to the applicable Phase 2 standards, small volume engine manufacturers as defined in this part may, at their option, certify their engines families as Phase 1 engines until the 2010 model year. Such engines shall not exceed the applicable Phase 1 standards and are excluded from the averaging, banking and trading program and any related credit calculations. Beginning with the 2010 model year, these engines must meet the applicable Phase 2 standards.

(7) In lieu of certifying to the applicable Phase 2 standards, manufacturers of small

volume engine families, as defined in this part may, at their option, certify their small volume engine families as Phase 1 engines until the 2010 model year. Such engines shall not exceed the applicable Phase 1 standards and are excluded from the averaging, banking and trading program and any related credit calculations. Beginning with the 2010 model year, these engines must meet the applicable Phase 2 standards.

(8) Notwithstanding the standards shown in Table 3 of this section, the HC+NO<sub>x</sub> (NMHC+NO<sub>x</sub>) standard for Phase 2 Class II side valve engine families with annual production of 1000 or less shall be 24.0 g/kW-hr (22.0 g/kW-hr) for model years 2010 and later. Engines produced subject to this provision may not exceed this standard and are excluded from the averaging, banking and trading program and any related credit calculations.

\* \* \* \* \*

5. Section 90.104 is amended by adding introductory text and adding paragraphs (d) through (h) to read as follows:

**§ 90.104 Compliance with emission standards.**

Paragraphs (a) through (c) of this section apply to Phase 1 engines only. Paragraphs (d) through (h) of this section apply only to Phase 2 engines.

\* \* \* \* \*

(d) The exhaust emission standards (FELs, where applicable) for Phase 2 engines set forth in this part apply to the emissions of the engines for their full useful lives as determined pursuant to §90.105.

(e) For all Phase 2 engines, if all test engines representing an engine family have emissions, when properly tested according to procedures in this part, less than or equal to each Phase 2 emission standard (FEL, where applicable) in a given engine class and given model year, when multiplicatively adjusted by the deterioration factor determined in this section, that family complies with that class of emission standards for purposes of certification. If any test engine representing an engine family has emissions adjusted multiplicatively by the deterioration factor determined in this section, greater than any one emission standard (FEL, where applicable) for a given displacement class, that family does not comply with that class of emission standards.

(f) Each engine manufacturer must comply with all provisions of the averaging, banking and trading program outlined in subpart C of this part for each engine family participating in that program.

(g)(1) Small volume engine manufacturers and small volume engine families may, at their option, take deterioration factors for HC+NO<sub>x</sub> (NMHC+NO<sub>x</sub>) and CO from Table 1 of this section, or they may calculate deterioration factors for HC+NO<sub>x</sub> (NMHC+NO<sub>x</sub>) and CO according to the process described in paragraph (h) of this section. For technologies that are not addressed in Table 1 of this section, the manufacturer may ask the Administrator to assign a deterioration factor prior to the time of certification.

(2) Table 1 follows:

Table 1: Nonhandheld Engine HC+NO<sub>x</sub> (NMHC+NO<sub>x</sub>) and CO  
Assigned Deterioration Factors for Small Volume Manufacturers  
and Small Volume Engine Families

Engine Class	Side Valve Engines		Overhead Valve Engines		Engines with aftertreatment
	HC+NO <sub>x</sub> (NMHC+NO <sub>x</sub> )	CO	HC+NO <sub>x</sub> (NMHC+NO <sub>x</sub> )	CO	Dfs must be calculated using the formula in § 90.104(g)(3)
Class I	2.1	1.1	1.5	1.1	
Class II	1.6	1.1	1.4	1.1	

(3) Formula for calculating deterioration factors for engines with aftertreatment:

$$DF = [(NE * EDF) - (CC * F)] / (NE - CC)$$

where:

DF = deterioration factor

NE = new engine emission levels prior to the catalyst (g/kW-hr)

EDF = deterioration factor for engines without catalyst as shown in Table 1

CC = amount converted at 0 hours in g/kW-hr

F = 0.8 for HC (NMHC) and 0.0 for NO<sub>x</sub> for Class I and II engines

F = 0.8 for CO for all classes of engines

(h)(1) Manufacturers shall obtain an assigned df or calculate a df, as appropriate, for each regulated pollutant for all Phase 2 engine families. Such dfs shall be used for certification,

production line testing, and Selective Enforcement Auditing.

(2) For engines not using assigned dfs from Table 1 of this section, dfs shall be determined as follows:

(i) On at least one test engine representing the configuration chosen to be the most likely to exceed HC+NO<sub>x</sub> (NMHC+NO<sub>x</sub>) emission standards, (FELs where applicable), and constructed to be representative of production engines pursuant to §90.117, conduct full Federal test procedure emission testing pursuant to the regulations of Subpart E of this part at the number of hours representing stabilized emissions pursuant to §90.118. If more than one engine is tested, average the results and round to the same number of decimal places contained in the applicable standard, expressed to one additional significant figure;

(ii) Conduct such emission testing again following aging the engine. The aging procedure should be designed to allow the manufacturer to appropriately predict the in-use emission deterioration expected over the useful life of the engine, taking into account the type of wear and other deterioration mechanisms expected under typical consumer use which could affect emissions performance. If more than one engine is tested, average the results and round to the same number of decimal places contained in the applicable standard, expressed to one additional significant figure;

(iii) Divide the full useful life emissions (average emissions, if applicable) for each regulated pollutant by the stabilized emissions (average emissions, if applicable) and round to two significant figures. The resulting number shall be the df, unless it is less than 1.0, in which case the df shall be 1.0.

(iv) At the manufacturer's option additional emission test points can be scheduled

between the stabilized emission test point and the full useful life test period. If intermediate tests are scheduled, the test points must be evenly spaced over the full useful life period (plus or minus 2 hours) and one such test point shall be at one-half of full useful life (plus or minus 2 hours).

For each pollutant HC+NO<sub>x</sub> (NMHC+NO<sub>x</sub>) and CO, a line must be fitted to the data points treating the initial test as occurring at hour zero, and using the method of least-squares. The deterioration factor is the calculated emissions durability period divided by the calculated emissions at zero hours.

(3) EPA may reject a df if it has evidence that the df is not appropriate for that family within 30 days of receipt from the manufacturer. The manufacturer must retain actual emission test data to support its choice of df and furnish that data to the Administrator upon request. Manufacturers may request approval by the Administrator of alternate procedures for determining deterioration. Any submitted df not rejected by EPA within 30 days shall be deemed to have been approved.

(4) Calculated deterioration factors may cover families and model years in addition to the one upon which they were generated if the manufacturer submits a justification acceptable to the Administrator in advance of certification that the affected engine families can be reasonably expected to have similar emission deterioration characteristics.

(5) Engine families that undergo running changes need not generate a new df if the manufacturer submits a justification acceptable to the Administrator concurrent with the running change that the affected engine families can be reasonably expected to have similar emission deterioration characteristics.

6. Section 90.105 is revised to read as follows:

**§ 90.105 Useful life periods for Phase 2 engines.**

(a) Manufacturers shall declare the applicable useful life category for each engine family at the time of certification as described in this section. Such category shall be the category which most closely approximates the expected useful lives of the equipment into which the engines are anticipated to be installed as determined by the engine manufacturer. Manufacturers shall retain data appropriate to support their choice of useful life category for each engine family. Such data shall be furnished to the Administrator upon request.

(1) For nonhandheld engines: Manufacturers shall select a useful life category from Table 1 of this section at the time of certification.

(2) Table 1 follows:

Table 1: Useful Life Categories for Nonhandheld Engines (hours)

Class I	125	250	500
Class II	250	500	1000

(3) [Reserved]

(4) [Reserved]

(5) Data to support a manufacturer's choice of useful life category, for a given engine family, may include but are not limited to:

- (i) Surveys of the life spans of the equipment in which the subject engines are installed;
- (ii) Engineering evaluations of field aged engines to ascertain when engine performance



deteriorates to the point where usefulness and/or reliability is impacted to a degree sufficient to necessitate overhaul or replacement;

(iii) Warranty statements and warranty periods;

(iv) Marketing materials regarding engine life;

(v) Failure reports from engine customers; and

(vi) Engineering evaluations of the durability, in hours, of specific engine technologies, engine materials or engine designs.

(b) [Reserved]

7. Section 90.106 is amended by revising paragraph (a) and adding new paragraph (b)(3) to read as follows:

**§ 90.106 Certificate of conformity.**

(a)(1) Except as provided in §90.2(b), every manufacturer of new engines produced during or after model year 1997 must obtain a certificate of conformity covering such engines; however, engines manufactured during an annual production period beginning prior to September 1, 1996 are not required to be certified.

(2) Except as required in paragraph (b)(3) of this section, Class II engines manufactured during an annual production period beginning prior to September 1, 2000 are not required to meet Phase 2 requirements.

(b)\* \* \*

(3) Manufacturers who commence an annual production period for a Class II engine family between January 1, 2000 and September 1, 2000 must meet Phase 2 requirements for that family only if that production period will exceed 12 months in length.

\* \* \* \* \*

8. Section 90.107 is amended by removing the period at the end of paragraph (d)(5) and adding a semicolon in its place, by removing "and" at the end of paragraph (d)(9), by removing the period at the end of paragraph (d)(10) and adding a semicolon in its place, and by adding new paragraph (d)(11) to read as follows:

**§ 90.107 Application for certification.**

\* \* \* \* \*

(d)\* \* \*

(11) This paragraph (d)(11) is applicable only to Phase 2 engines.

(i) Engine manufacturers participating in the averaging, banking and trading program as described in Subpart C of this part shall declare the applicable Family Emission Limit (FEL) for HC+NO<sub>x</sub> (NMHC+NO<sub>x</sub>).

(ii) Provide the applicable useful life as determined under §90.105.

\* \* \* \* \*

9. Section 90.108 is amended by adding paragraphs (c) and (d) to read as follows:

## **§ 90.108 Certification.**

\* \* \* \* \*

(c) For certificates issued for engine families included in the averaging, banking and trading program as described in subpart C of this part:

(1) Failure to comply with all applicable averaging, banking and trading provisions in this part will be considered to be a failure to comply with the terms and conditions upon which the certificate was issued, and the certificate may be determined to be void *ab initio*.

(2) The manufacturer shall bear the burden of establishing to the satisfaction of the Administrator that the conditions upon which the certificate was granted were satisfied or waived.

(d) The Administrator may, upon request by a manufacturer, waive any requirement of this part otherwise necessary for the issuance of a certificate. The Administrator may set such conditions in a certificate as he or she deems appropriate to assure that the waived requirements are either satisfied or are demonstrated, for the subject engines, to be inappropriate, irrelevant or met by the application of a different requirement under this Chapter. The Administrator may indicate on such conditional certificates that failure to meet these conditions may result in suspension or revocation or the voiding *ab initio* of the certificate.

10. Section 90.113 is amended by revising the section heading and adding two sentences to the beginning of paragraph (a) to read as follows:

## **§ 90.113 In-use testing program for Phase 1 engines.**

(a) This section applies only to Phase 1 engines. In-use testing provisions for Phase 2 engines are found in subpart M of this part.\* \* \*

\* \* \* \* \*

11. Section 90.114 is amended by removing "and" at the end of paragraph (c)(9), by removing the period at the end of paragraph (c)(10) and adding a semicolon in its place and by adding new paragraphs (c)(11) and (f) to read as follows:

**§ 90.114 Requirement of certification--engine information label.**

\* \* \* \* \*

(c)\* \* \*

(11) For Phase 2 engines, the useful life category as determined by the manufacturer pursuant to §90.105. Such useful life category shall be shown by one of the following statements to be appended to the statement required under paragraph (c)(7) of this section:

(i) “EMISSIONS COMPLIANCE PERIOD: [useful life] HOURS”; or

(ii) “EMISSIONS COMPLIANCE PERIOD: CATEGORY [fill in C, B or A as indicated and appropriate from the tables in §90.105], REFER TO OWNER’S MANUAL FOR FURTHER INFORMATION”;

\* \* \* \* \*

(f) Manufacturers electing to use the labeling language of paragraph (c)(11)(ii) of this section must provide in the documents intended to be conveyed to the ultimate purchaser, the

statement:

(1) For nonhandheld engines: The Emissions Compliance Period referred to on the Emissions Compliance label indicates the number of operating hours for which the engine has been shown to meet Federal emission requirements. For engines less than 225 cc displacement, Category C= 125 hours, B= 250 hours and A = 500 hours. For engines of 225 cc or more, Category C = 250 hours, B = 500 hours and A = 1000 hours.

(2) [Reserved]

(3) The manufacturer must provide, in the same document as the statement in paragraph (f)(1) of this section, a statement of the engine's displacement or an explanation of how to readily determine the engine's displacement. The Administrator may approve alternate language to the statement in paragraph (f)(1) of this section, provided that the alternate language provides the ultimate purchaser with a clear description of the number of hours represented by each of the three letter categories for the subject engine's displacement.

12. Section 90.116 is amended by revising paragraph (d)(6) and (d)(7) and adding paragraphs (d)(8) through (d)(10) to read as follows:

**§ 90.116 Certification procedure--determining engine displacement, engine class, and engine families.**

\* \* \* \* \*

(d) \* \* \*

(6) The location of valves, where applicable, with respect to the cylinder (e.g. side valves or overhead valves);

(7) The number of catalytic converters, location, volume and composition;

(8) The thermal reactor characteristics;

(9) The fuel required (e.g. gasoline, natural gas, LPG); and

(10) The useful life category.

\* \* \* \* \*

13. Section 90.117 is amended by revising paragraph (a) to read as follows:

**§ 90.117 Certification procedure--test engine selection.**

(a) For Phase 1 engines, the manufacturer must select, from each engine family, a test engine that the manufacturer determines to be most likely to exceed the emission standard. For Phase 2 engines, the manufacturer must select, from each engine family, a test engine of a configuration that the manufacturer determines to be most likely to exceed the HC+NO<sub>x</sub> (NMHC+NO<sub>x</sub>) Family Emission Limit (FEL), or HC+NO<sub>x</sub> (NMHC+NO<sub>x</sub>) standard if no FEL is applicable.

\* \* \* \* \*

14. Section 90.118 is amended by revising the section heading and adding a new paragraph (e) to read as follows:

**§ 90.118 Certification procedure--service accumulation and usage of deterioration factors.**

\* \* \* \* \*

(e) For purposes of establishing whether Phase 2 engines comply with applicable exhaust emission standards or FELs, the test results for each regulated pollutant as measured pursuant to §90.119 shall be multiplied by the applicable df determined under §90.104 (g) or (h). The product of the two numbers shall be rounded to the same number of decimal places contained in the applicable standard, and compared against the applicable standard or FEL, as appropriate.

15. Section 90.120 is amended by adding paragraph (c) to read as follows:

**§ 90.120 Certification procedure -- use of special test procedures**

\* \* \* \* \*

(c) Optional procedures approved during Phase 1 can be carried over to Phase 2, following advance approval by the Administrator, to the extent the alternate procedure continues to yield results equal to the results from the specified test procedures in subpart E.

16. Section 90.122 is amended by revising the first sentence of paragraph (a) and adding paragraph (d)(4) as follows:

**§ 90.122 Amending the application and certificate of conformity.**

(a) The engine manufacturer must notify the Administrator when either an engine is to be added to a certificate of conformity, an FEL is to be changed, or changes are to be made to a product line covered by a certificate of conformity. \* \* \*

\* \* \* \* \*

(d)\* \* \*

(4) If the Administrator determines that a revised FEL meets the requirements of this subpart and the Act, the appropriate certificate of conformity will be amended, or a new certificate will be issued to reflect the revised FEL. The certificate of conformity is revised conditional upon compliance with § 90.207(b).

\* \* \* \* \*



17. Subpart C, which was formerly reserved, is added to part 90 to read as follows:

**Subpart C - Certification Averaging, Banking, and Trading Provisions**

Sec.

90.201 Applicability.

90.202 Definitions.

90.203 General provisions.

90.204 Averaging.

90.205 Banking.

90.206 Trading.

90.207 Credit calculation and manufacturer compliance with emission standards.

90.208 Certification.

90.209 Maintenance of records.

90.210 End-of-year and final reports.

90.211 Request for hearing.

**Subpart C - Certification Averaging, Banking, and Trading Provisions**

§ 90.201 Applicability.

The requirements of this subpart C are applicable to all Phase 2 spark-ignition engines subject to the provisions of subpart A of this part except as provided in § 90.103(a). These

provisions are not applicable to any Phase 1 engines. Participation in the averaging, banking and trading program is voluntary, but if a manufacturer elects to participate, it must do so in compliance with the regulations set forth in this subpart. The provisions of this subpart are applicable for HC+NO<sub>x</sub> (NMHC+NO<sub>x</sub>) emissions but not for CO emissions.

#### **§ 90.202 Definitions.**

The definitions in subpart A of this part apply to this subpart. The following definitions also apply to this subpart:

*Averaging* means the exchange of emission credits between engine families within a given manufacturer's product line.

*Banking* means the retention of emission credits by the manufacturer generating the emission credits or obtaining such credits through trading, for use in future model year averaging or trading as permitted in this part.

*Emission credits* represent the amount of emission reduction or exceedance, by an engine family, below or above the applicable HC+NO<sub>x</sub> (NMHC+NO<sub>x</sub>) emission standard, respectively. FELs below the standard create "positive credits," while FELs above the standard create "negative credits." In addition, "projected credits" refer to emission credits based on the projected applicable production volume of the engine family. "Reserved credits" are emission credits generated within a model year waiting to be reported to EPA at the end of the model year. "Actual credits" refer to emission credits based on actual applicable production volume as contained in the end-of-year reports submitted to EPA. Some or all of these credits may be revoked if EPA review of the end-of-year reports or any subsequent audit action(s) reveals

problems or errors of any nature with credit computations.

*Trading* means the exchange of emission credits between manufacturers.

### **§ 90.203 General provisions.**

(a) The certification averaging, banking, and trading provisions for HC+NO<sub>x</sub> and NMHC+NO<sub>x</sub> emissions from eligible engines are described in this subpart.

(b) An engine family may use the averaging, banking and trading provisions for HC+NO<sub>x</sub> and NMHC+NO<sub>x</sub> emissions if it is subject to regulation under this part with certain exceptions specified in paragraph (c) of this section. HC+NO<sub>x</sub> and NMHC+NO<sub>x</sub> credits shall be interchangeable subject to the limitations on credit generation, credit usage, and other provisions described in this subpart.

(c) A manufacturer shall not include in its calculation of credit generation and may exclude from its calculation of credit usage, any new engines:

(1) which are intended to be exported, unless the manufacturer has reason or should have reason to believe that such engines have been or will be imported in a piece of equipment; or

(2) which are subject to state engine emission standards pursuant to a waiver granted by EPA under section 209(e) of the Act, unless the manufacturer demonstrates to the satisfaction of the Administrator that inclusion of these engines in averaging, banking and trading is appropriate.

(d) For an engine family using credits, a manufacturer may, at its option, include its entire production of that engine family in its calculation of credit usage for a given model year.

(e)(1) A manufacturer may certify engine families at Family Emission Limits (FELs)

above or below the applicable emission standard subject to the limitation in paragraph (f) of this section, provided the summation of the manufacturer's projected balance of credits from all credit transactions for all engine classes in a given model year is greater than or equal to zero, as determined under § 90.207.

(2) A manufacturer of an engine family with an FEL exceeding the applicable emission standard must obtain positive emission credits sufficient to address the associated credit shortfall via averaging, banking, or trading.

(3) An engine family with an FEL below the applicable emission standard may generate positive emission credits for averaging, banking, or trading, or a combination thereof.

(4) In the case of a Selective Enforcement Audit (SEA) failure, credits may be used to cover subsequent production of engines for the family in question if the manufacturer elects to recertify to a higher FEL. Credits may not be used to remedy a nonconformity determined by an SEA, except that the Administrator may permit the use of credits to address a nonconformity determined by an SEA where the use of such credits is one component of a multi-part remedy for the previously produced engines and the remedy, including the use of credits and the quantity of credits being used, is such that the Administrator is satisfied that the manufacturer has strong and lasting incentive to accurately verify its new engine emission levels and will set or reset its FELs for current and future model years so that production line compliance is assured.

(5) In the case of a production line testing (PLT) failure pursuant to subpart H of this part, a manufacturer may revise the FEL based upon production line testing results obtained under subpart H of this part and upon Administrator approval pursuant to § 90.122(d). The manufacturer may use credits to cover both past production and subsequent production of the

engines as needed as allowed under § 90.207(c).

(f) No Phase 2 engine family may have a HC + NO<sub>x</sub> FEL that is greater than 32.2 g/kW-hr for Class I engines and 26.8 g/kW-hr for Class II engines.

(g)(1) Credits generated in a given model year by an engine family subject to the Phase 2 emission requirements may only be used in averaging, banking or trading, as appropriate, for any other engine family for which the Phase 2 requirements are applicable. Credits generated in one model year may not be used for prior model years, except as allowed under §90.207(c).

(2) For the 2005 model year and for each subsequent model year, manufacturers of Class II engines must provide a demonstration that the production weighted average FEL for HC+NO<sub>x</sub> (including NMHC+NO<sub>x</sub> FELs), for all of the manufacturer's Class II engines, will not exceed 13.6 g/kW-hr for the 2005 model year, 13.1 g/kW-hr for the 2006 model year and 12.6 g/kW-hr for the 2007 and each subsequent Phase 2 model year. Such demonstration shall be subject to the review and approval of the Administrator, shall be provided at the time of the first Class II certification of that model year and shall be based on projected eligible production for that model year.

(h) Manufacturers must demonstrate compliance under the averaging, banking, and trading provisions for a particular model year by 270 days after the end of the model year. Except as provided in §90.207(c), an engine family generating negative credits for which the manufacturer does not obtain or generate an adequate number of positive credits by that date from the same or previous model year engines will violate the conditions of the certificate of conformity. The certificate of conformity may be voided *ab initio* pursuant to §90.123 for this engine family.

#### **§ 90.204 Averaging.**

(a) Negative credits from engine families with FELs above the applicable emission standard must be offset by positive credits from engine families having FELs below the applicable emission standard, as allowed under the provisions of this subpart. Averaging of credits in this manner is used to determine compliance under §90.207(b).

(b) Cross-class averaging of credits is allowed across all classes of nonroad spark-ignition nonhandheld engines at or below 19 kW.

(c) Credits used in averaging for a given model year may be obtained from credits generated in the same model year by another engine family, credits banked in previous model years, or credits of the same or previous model year obtained through trading. The restrictions of this paragraph notwithstanding, credits from a given model year may be used to address credit needs of previous model year engines as allowed under §90.207(c).

(d) The use of credits generated under the early banking provisions of §90.205(b) is subject to regulations under this subpart.

#### **§ 90.205 Banking.**

(a)(1) Beginning August 1, 2007, a manufacturer of a Class I engine family with an FEL below the applicable emission standard for a given model year may bank credits in that model year for use in averaging and trading. For new Class I engine families initially produced during the period starting August 1, 2003 through July 31, 2007, a manufacturer of a Class I engine family with an FEL below the applicable emission standard for a given model year may bank credits in that model year for use in averaging and trading.

(2) [Reserved]

(3) Beginning with the 2001 model year, a manufacturer of a Class II engine family with an FEL below the applicable emission standard for a given model year may bank credits in that model year for use in averaging and trading.

(4) [Reserved]

(5) [Reserved]

(6) Negative credits may be banked only according to the requirements under § 90.207(c).

(b)(1) For Class I engine families initially produced during the period beginning with the 1999 model year and prior to August 1, 2003, a manufacturer may bank early credits for engines with HC + NO<sub>x</sub> FELs below 16.1 g/kW-hr. All early credits for such Class I engines shall be calculated against a HC + NO<sub>x</sub> level of 20.5 g/kW-hr and may continue to be calculated against the 20.5 g/kW-hr level until August 1, 2007.

(2) Beginning with the 1999 model year and prior to the applicable date listed in paragraph (a) of this section for Class II engines, a manufacturer may bank early credits for all Class II engines with HC+NO<sub>x</sub> FELs below 12.1 g/kW-hr. All early credits for Class II engines shall be calculated against a HC+NO<sub>x</sub> level of 18.0 g/kW-hr.

(3) [Reserved]

(4) [Reserved]

(5) [Reserved]

(6) Engines certified under the early banking provisions of this paragraph are subject to all of the requirements of this part applicable to Phase 2 engines.

(c) A manufacturer may bank actual credits only after the end of the model year and after

EPA has reviewed the manufacturer's end-of-year reports. During the model year and before submittal of the end-of-year report, credits originally designated in the certification process for banking will be considered reserved and may be redesignated for trading or averaging in the end-of-year report and final report.

(d) Credits declared for banking from the previous model year that have not been reviewed by EPA may be used in averaging or trading transactions. However, such credits may be revoked at a later time following EPA review of the end-of-year report or any subsequent audit actions.

#### **§ 90.206 Trading.**

(a) An engine manufacturer may exchange emission credits with other engine manufacturers in trading.

(b) Credits for trading can be obtained from credits banked in previous model years or credits generated during the model year of the trading transaction.

(c) Traded credits can be used for averaging, banking, or further trading transactions.

(d) Traded credits are subject to the limitations on use for past model years, as set forth in § 90.204(c).

(e) In the event of a negative credit balance resulting from a transaction, both the buyer and the seller are liable, except in cases involving fraud. Certificates of all engine families participating in a negative trade may be voided *ab initio* pursuant to § 90.123.

#### **§ 90.207 Credit calculation and manufacturer compliance with emission standards.**



(a) For each engine family, HC+NO<sub>x</sub> [NMHC+NO<sub>x</sub>] certification emission credits (positive or negative) are to be calculated according to the following equation and rounded to the nearest gram. Consistent units are to be used throughout the equation.

$$\text{Credits} = \text{Production} \times (\text{Standard} - \text{FEL}) \times \text{Power} \times \text{Useful life} \times \text{Load Factor}$$

Where:

**Production** = eligible production as defined in this part. Annual production projections are used to project credit availability for initial certification. Eligible production volume is used in determining actual credits for end-of-year compliance determination.

**Standard** = the current and applicable Small SI engine HC+NO<sub>x</sub> (NMHC+NO<sub>x</sub>) emission standard in grams per kilowatt hour as determined in §90.103 or, for early credits, the applicable emission level as specified in §90.205(b).

**FEL** = the family emission limit for the engine family in grams per kilowatt hour.

**Power** = the maximum modal power of the certification test engine, in kilowatts, as calculated from the applicable federal test procedure as described in this part.

**Useful Life** = the useful life in hours corresponding to the useful life category for which the engine family was certified.

**Load Factor** = 47 percent (i.e., 0.47) for Test Cycle A and Test Cycle B. For approved alternate test procedures, the load factor must be calculated according to the following formula:

$$\sum^n (\% \text{MTT mode}_i) \times (\% \text{MTS mode}_i) \times (\text{WF mode}_i)$$

$$i = 1$$

Where:

**%MTT mode<sub>i</sub>** = percent of the maximum FTP torque for mode i.

**%MTS mode<sub>i</sub>** = percent of the maximum FTP engine rotational speed for mode i.

**WF mode<sub>i</sub>** = the weighting factor for mode i.

(b) Manufacturer compliance with the emission standards is determined on a corporate average basis at the end of each model year. A manufacturer is in compliance when the sum of positive and negative emission credits it holds is greater than or equal to zero, except that the sum of positive and negative credits may be less than zero as allowed under paragraph (c) of this section.

(c) If, as a result of production line testing as required in subpart H of this part, an engine family is determined to be in noncompliance pursuant to §90.710, the manufacturer may raise its FEL for past and future production as necessary. Further, a manufacturer may carry a negative credit balance (known also as a credit deficit) for the subject class and model year and for the next three model years. The credit deficit may be no larger than that created by the nonconforming family. If the credit deficit still exists after the model year following the model year in which the nonconformity occurred, the manufacturer must obtain and apply credits to offset the remaining credit deficit at a rate of 1.2 grams for each gram of deficit within the next two model years. The provisions of this paragraph are subject to the limitations in paragraph (d) of this section.

(d) Regulations elsewhere in this part notwithstanding, if an engine manufacturer experiences two or more production line testing failures pursuant to the regulations in subpart H of this part in a given model year, the manufacturer may raise the FEL of previously produced engines only to the extent that such engines represent no more than 10 percent of the manufacturer's total eligible production for that model year, as determined on the date when the FEL is adjusted. For any additional engine families determined to be in noncompliance, the manufacturer must conduct offsetting projects approved in advance by the Administrator.

(e) If, as a result of production line testing under this subpart, a manufacturer desires to lower its FEL it may do so subject to § 90.708(c).

(f) Except as allowed at paragraph (c) of this section, when a manufacturer is not in compliance with the applicable emission standard by the date 270 days after the end of the model year, considering all credit calculations and transactions completed by then, the manufacturer will be in violation of these regulations and EPA may, pursuant to § 90.123, void *ab initio* the certificates of engine families for which the manufacturer has not obtained sufficient positive emission credits.

#### **§ 90.208 Certification.**

(a) In the application for certification a manufacturer must:

(1) Submit a statement that the engines for which certification is requested will not, to the best of the manufacturer's belief, cause the manufacturer to be in noncompliance under § 90.207(b) when all credits are calculated for the manufacturer's engine families.

(2) Declare an FEL for each engine family for HC+NO<sub>x</sub> (NMHC+NO<sub>x</sub>). The FEL must

have the same number of significant digits as the emission standard.

(3) Indicate the projected number of credits generated/needed for this family; the projected applicable eligible annual production volume, and the values required to calculate credits as given in § 90.207.

(4) Submit calculations in accordance with § 90.207 of projected emission credits (positive or negative) based on annual production projections for each family.

(5) (i) If the engine family is projected to have negative emission credits, state specifically the source (manufacturer/engine family or reserved) of the credits necessary to offset the credit deficit according to projected annual production.

(ii) If the engine family is projected to generate credits, state specifically (manufacturer/engine family or reserved) where the projected annual credits will be applied.

(iii) The manufacturer may supply the information required by this section in the form of a spreadsheet detailing the manufacturer's annual production plans and the credits generated or consumed by each engine family.

(b) All certificates issued are conditional upon manufacturer compliance with the provisions of this subpart both during and after the model year of production.

(c) Failure to comply with all provisions of this subpart will be considered to be a failure to satisfy the conditions upon which the certificate was issued, and the certificate may be determined to be void *ab initio* pursuant to § 90.123.

(d) The manufacturer bears the burden of establishing to the satisfaction of the Administrator that the conditions upon which the certificate was issued were satisfied or waived.

(e) Projected credits based on information supplied in the certification application may be

used to obtain a certificate of conformity. However, any such credits may be revoked based on review of end-of-year reports, follow-up audits, and any other verification steps considered appropriate by the Administrator.

**§ 90.209 Maintenance of records.**

(a) The manufacturer must establish, maintain, and retain the following adequately organized and indexed records for each engine family:

- (1) EPA engine family identification code;
- (2) Family Emission Limit (FEL) or FELs where FEL changes have been implemented during the model year;
- (3) Maximum modal power for the certification test engine;
- (4) Projected production volume for the model year; and
- (5) Records appropriate to establish the quantities of engines that constitute eligible production as defined in § 90.3 for each FEL.

(b) Any manufacturer producing an engine family participating in trading reserved credits must maintain the following records on an annual basis for each such engine family:

- (1) The engine family;
- (2) The actual applicable production volume;
- (3) The values required to calculate credits as given in § 90.207;
- (4) The resulting type and number of credits generated/required;
- (5) How and where credit surpluses are dispersed; and
- (6) How and through what means credit deficits are met.

(c) The manufacturer must retain all records required to be maintained under this section for a period of eight years from the due date for the end-of-model year report. Records may be retained as hard copy or reduced to microfilm, ADP diskettes, and so forth, depending on the manufacturer's record retention procedure; provided, that in every case all information contained in the hard copy is retained.

(d) Nothing in this section limits the Administrator's discretion in requiring the manufacturer to retain additional records, or submit information not specifically required by this section, if otherwise permitted by law.

(e) Pursuant to a request made by the Administrator, the manufacturer must submit to the Administrator the information that the manufacturer is required to retain.

(f) EPA may, pursuant to § 90.123, void *ab initio* a certificate of conformity for an engine family for which the manufacturer fails to retain the records required in this section or to provide such information to the Administrator upon request.

#### **§ 90.210 End-of-year and final reports.**

(a) End-of-year and final reports must indicate the engine family, the engine class, the actual production volume, the values required to calculate credits as given in § 90.207, and the number of credits generated/required. Manufacturers must also submit how and where credit surpluses were dispersed (or are to be banked) and/or how and through what means credit deficits were met. Copies of contracts related to credit trading must be included or supplied by the broker, if applicable. The report must include a calculation of credit balances to show that the credit summation for all engines is equal to or greater than zero (or less than zero in cases of

negative credit balances as permitted in § 90.207(c)). For model year 2005 and later, the report must include a calculation of the production weighted average HC+NO<sub>x</sub> (including NMHC+NO<sub>x</sub>) FEL for Class II engine families to show compliance with the provisions of § 90.203(g)(2).

(b) The calculation of eligible production for end-of-year and final reports must be based on engines produced for the United States market, excluding engines which are subject to state emission standards pursuant to a waiver granted by EPA under section 209(e) of the Act. Upon advance written request, the Administrator will consider other methods to track engines for credit calculation purposes that provide high levels of confidence that eligible production or sales are accurately counted.

(c)(1) End-of-year reports must be submitted within 90 days of the end of the model year to: Manager, Engine Compliance Programs Group (6403-J), U.S. Environmental Protection Agency, Washington, DC 20460.

(2) Unless otherwise approved by the Administrator, final reports must be submitted within 270 days of the end of the model year to: Manager, Engine Compliance Programs Group (6403-J), U.S. Environmental Protection Agency, Washington, DC 20460.

(d) Failure by a manufacturer to submit any end-of-year or final reports in the specified time for any engines subject to regulation under this part is a violation of § 90.1003(a)(2) and section 213(d) of the Clean Air Act for each engine.

(e) A manufacturer generating credits for banking only who fails to submit end-of-year reports in the applicable specified time period (90 days after the end of the model year) may not use the credits until such reports are received and reviewed by EPA. Use of projected credits

pending EPA review is not permitted in these circumstances.

(f) Errors discovered by EPA or the manufacturer in the end-of-year report, including errors in credit calculation, may be corrected in the final report.

(g) If EPA or the manufacturer determines that a reporting error occurred on an end-of-year or final report previously submitted to EPA under this section, the manufacturer's credits and credit calculations must be recalculated. Erroneous positive credits will be void except as provided in paragraph (h) of this section. Erroneous negative credit balances may be adjusted by EPA.

(h) If EPA review determines a reporting error in the manufacturer's favor (that is, resulting in an increased credit balance) or if the manufacturer discovers such an error within 270 days of the end of the model year, EPA shall restore the credits for use by the manufacturer.

#### **§ 90.211 Request for hearing.**

An engine manufacturer may request a hearing on the Administrator's voiding of the certificate under §§ 90.203(h), 90.206(e), 90.207(f), 90.208(c), or 90.209(f), pursuant to §90.124. The procedures of §90.125 shall apply to any such hearing.



## **Subpart D--Emission Test Equipment Provisions**

18. Section 90.301 is amended by revising paragraph (a) and adding paragraph (d) to read as follows:

### **§ 90.301 Applicability.**

(a) This subpart describes the equipment required in order to perform exhaust emission tests on new nonroad spark-ignition engines and vehicles subject to the provisions of subpart A of this part. Certain text in this subpart is identified as pertaining to Phase 1 or Phase 2 engines. Such text pertains only to engines of the specified Phase. If no indication of Phase is given, the text pertains to all engines, regardless of Phase.

\* \* \* \* \*

(d) For Phase 2 Class I, and Phase 2 Class II natural gas fueled engines, the following sections from 40 CFR Part 86 are applicable to this subpart. The requirements of these sections which pertain specifically to the measurement and calculation of non-methane hydrocarbon (NMHC) exhaust emissions from otto cycle heavy-duty engines must be followed when determining the NMHC exhaust emissions from Phase 2 Class I, and Phase 2 Class II natural gas fueled engines. Those sections are: 40 CFR 86.1306-90 Equipment required and specifications; overview, 40 CFR 86.1309-90 Exhaust gas sampling system; otto-cycle engines, 40 CFR 86-1311-94 Exhaust gas analytical system; CVS bag sampling, 40 CFR 86.1313-94(e) Fuel Specification - Natural gas-fuel, 40 CFR 86.1314-94 Analytical gases, 40 CFR 86.1316-94

Calibrations; frequency and overview, 40 CFR 86.1321-94 Hydrocarbon analyzer calibration, 40 CFR 86.1325-94 Methane analyzer calibration, 40 CFR 86.1327-94 Engine dynamometer test procedures, overview, 40 CFR 86.1340-94 Exhaust sample analysis, 40 CFR 86.1342-94 Calculations; exhaust emissions, 40 CFR 86.1344-94(d) Required information - Pre-test data, 40 CFR 86.1344-94(e) Required information - Test data.

19. Section 90.302 is revised to read as follows:

**§ 90.302 Definitions.**

The definitions in § 90.3 apply to this subpart. The following definitions also apply to this subpart.

*Intermediate speed* means the engine speed which is 85 percent of the rated speed.

*Natural gas* means a fuel whose primary constituent is methane.

*Rated speed* means the speed at which the manufacturer specifies the maximum rated power of an engine.

20. Section 90.308 is amended by revising paragraph (c) to read as follows:

**§ 90.308 Lubricating Oil and Test Fuels**

\* \* \* \* \*

(c) *Test Fuels -- Service Accumulation and Aging.* Unleaded gasoline representative of commercial gasoline generally available through retail outlets must be used in service accumulation and aging for gasoline-fueled spark-ignition engines. As an alternative, the certification test fuels specified under paragraph (b) of this section may be used for engine service accumulation and aging. Leaded fuel may not be used during service accumulation or aging.

21. Section 90.329 is amended by adding paragraphs (c) to read as follows:

**§ 90.329 Catalyst thermal stress test**

\* \* \* \* \*

(c) *Phase 2 engines.* The catalyst thermal stress test is not required for engine families certified to the Phase 2 standards.

**Subpart E--Gaseous Exhaust Test Procedures**

22. Section 90.401 is amended by adding paragraphs (c) and (d) to read as follows:

**§ 90.401 Applicability.**

\* \* \* \* \*

(c) Certain text in this subpart is identified as pertaining to Phase 1 or Phase 2 engines. Such text pertains only to engines of the specified Phase. If no indication of Phase is given, the text pertains to all engines, regardless of Phase.

(d) For Phase 2 Class I, and Phase 2 Class II natural gas fueled engines, the following sections from 40 CFR Part 86 are applicable to this subpart. The requirements of these sections which pertain specifically to the measurement and calculation of non-methane hydrocarbon (NMHC) exhaust emissions from otto cycle heavy-duty engines must be followed when determining the NMHC exhaust emissions from Phase 2 Class I, and Phase 2 Class II natural gas fueled engines. Those sections are: 40 CFR 86.1327-94 Engine dynamometer test procedures, overview, 40 CFR 86.1340-94 Exhaust sample analysis, 40 CFR 86.1342-94 Calculations; exhaust emissions, 40 CFR 86.1344-94(d) Required information - Pre-test data, and 40 CFR 86.1344-94(e) Required information - Test data.

23. Section 90.404 is amended by adding a sentence after the first sentence of paragraph (b) to read as follows:

**§ 90.404 Test procedure overview.**

\* \* \* \* \*

(b) \* \* \* For Phase 2 Class I and Phase 2 Class II natural gas fueled engines the test is also designed to determine the brake-specific emissions of non-methane hydrocarbons. \* \* \*

\* \* \* \* \*

24. Section 90.409 is amended by revising paragraph (a)(3) to read as follows:

**§ 90.409 Engine dynamometer test run.**

(a) \* \* \*

(3) For Phase 1 engines, at the manufacturer's option, the engine can be run with the throttle in a fixed position or by using the engine's governor (if the engine is manufactured with a governor). In either case, the engine speed and load must meet the requirements specified in paragraph (b)(12) of this section. For Phase 2 Class I and Phase 2 Class II engines equipped with an engine speed governor, the governor must be used to control engine speed during all test cycle modes except for Mode 1 or Mode 6, and no external throttle control may be used that interferes with the function of the engine's governor; a controller may be used to adjust the governor setting for the desired engine speed in Modes 2-5 or Modes 7-10; and during Mode 1 or Mode 6 fixed throttle operation may be used to determine the 100 percent torque value.

\* \* \* \* \*

25. Section 90.410 is amended by revising paragraph (b) to read as follows:

**§ 90.410 Engine test cycle.**

\* \* \* \* \*

(b) For Phase 1 engines and Phase 2 Class I and II engines not equipped with an engine speed governor, during each non-idle mode, hold both the specified speed and load within  $\pm$  five percent of point. During the idle mode, hold speed within  $\pm$  ten percent of the manufacturer's specified idle engine speed. For Phase 2 Class I and II engines equipped with an engine speed governor, during Mode 1 or Mode 6 hold both the specified speed and load within  $\pm$  five percent of point, during Modes 2-3, or Modes 7-8 hold the specified load with  $\pm$  five percent of point, during Modes 4-5 or Modes 9-10, hold the specified load within the larger range provided by  $\pm$  0.27Nm ( $\pm$ 0.2 lb-ft), or  $\pm$  ten (10) percent of point, and during the idle mode hold the specified speed within  $\pm$  ten percent of the manufacturer's specified idle engine speed (see Table 1 in Appendix A to Subpart E of this part for a description of test Modes). The use of alternative test procedures is allowed if approved in advance by the Administrator.

\* \* \* \* \*

26. Section 90.427 is amended by revising paragraph (a) to read as follows:

**§ 90.427 Catalyst thermal stress resistance evaluation.**

(a) The purpose of the evaluation procedure specified in this section is to determine the effect of thermal stress on catalyst conversion efficiency for Phase 1 engines. The thermal stress is imposed on the test catalyst by exposing it to quiescent heated air in an oven. The evaluation of the effect of such stress on catalyst performance is based on the resultant degradation of the efficiency with which the conversions of specific pollutants are promoted. The application of

this evaluation procedure involves the several steps that are described in the following paragraphs.

\* \* \* \* \*

## **Subpart F - Selective Enforcement Auditing**

27. Section 90.503 is amended by revising paragraphs (f)(3) and (f)(4) to read as follows:

### **§ 90.503 Test orders.**

\* \* \* \* \*

(f) \* \* \*

(3) Any SEA test order for which the family or configuration, as appropriate, fails under § 90.510 or for which testing is not completed will not be counted against the annual limit.

(4) When the annual limit has been met, the Administrator may issue additional test orders to test those families or configurations for which evidence exists indicating nonconformity, or for which the Administrator has reason to believe are not being appropriately represented or tested in Production Line Testing conducted under subpart H of this part, if applicable. An SEA test order issued pursuant to this provision will include a statement as to the reason for its issuance.

28. Section 90.509 is amended by revising paragraph (b) to read as follows:

### **§ 90.509 Calculation and reporting of test results.**

\* \* \* \* \*

(b)(1) Final test results are calculated by summing the initial test results derived in



paragraph (a) of this section for each test engine, dividing by the number of tests conducted on the engine, and rounding to the same number of decimal places contained in the applicable standard. For Phase 2 engines only, this result shall be expressed to one additional significant figure.

(2) Final deteriorated test results (for Phase 2 test engines only) are calculated by applying the appropriate deterioration factors, from the certification process for the engine family, to the final test results, and rounding to the same number of decimal places contained in the applicable standard.

\* \* \* \* \*

29. Section 90.510 is amended by revising paragraph (b) to read as follows:

**§ 90.510 Compliance with acceptable quality level and passing and failing criteria for selective enforcement audits.**

\* \* \* \* \*

(b) For Phase I engines, a failed engine is an engine whose final test results pursuant to §90.509(b), for one or more of the applicable pollutants exceed the emission standard. For Phase 2 engines, a failed engine is an engine whose final deteriorated test results pursuant to §90.509(b), for one or more of the applicable pollutants exceed the emission standard (FEL, if applicable).

\* \* \* \* \*

30. Section 90.512 is amended by revising paragraph (b) to read as follows:

**§ 90.512 Request for public hearing.**

\* \* \* \* \*

(b)The manufacturer's request shall be filed with the Administrator not later than 15 days after the Administrator's notification of his or her decision to suspend, revoke or void, unless otherwise specified by the Administrator. The manufacturer shall simultaneously serve two copies of this request upon the Director of the Engine Programs and Compliance Division and file two copies with the Hearing Clerk of the Agency. Failure of the manufacturer to request a hearing within the time provided constitutes a waiver of the right to a hearing. Subsequent to the expiration of the period for requesting a hearing as of right, the Administrator may, in his or her discretion and for good cause shown, grant the manufacturer a hearing to contest the suspension, revocation or voiding.

\* \* \* \* \*

## **Subpart G--Importation of Nonconforming Engines**

31. Section 90.612 is amended by revising paragraph (g) to read as follows:

### **§ 90.612 Exemptions and exclusions.**

\* \* \* \* \*

(g) Applications for exemptions and exclusions provided for in paragraphs (b), (c), and (e) of this section are to be mailed to: U.S. Environmental Protection Agency, Office of Mobile Sources, Engine Compliance Programs Group (6403-J), Washington, D.C. 20460, Attention: Imports.

32. Subpart H, which was previously “reserved”, is added to part 90 read as follows:

**Subpart H - Manufacturer Production Line Testing Program**

Sec.

90.701 Applicability.

90.702 Definitions.

90.703 Production line testing by the manufacturer.

90.704 Maintenance of records; submission of information.

90.705 Right of entry and access.

90.706 Engine sample selection.

90.707 Test procedures.

90.708 Cumulative Sum (CumSum) Procedure.

90.709 Calculation and reporting of test results.

90.710 Compliance with criteria for production line testing.

90.711 Suspension and revocation of certificates of conformity.

90.712 Request for public hearing.

90.713 Administrative procedures for public hearing.

**Subpart H - Manufacturer Production Line Testing Program**

**§ 90.701 Applicability.**

(a) The requirements of this subpart are applicable to all Phase 2 nonroad nonhandheld engines families subject to the provisions of subpart A of this part unless otherwise exempted in this subpart.

(b) The procedures described in this subpart are optional for small volume engine manufacturers and small volume engine families as defined in this part. Small volume engine manufacturers and small volume engine families for which the manufacturer opts not to conduct testing under this subpart pursuant to this paragraph shall remain subject to the Selective Enforcement Auditing procedures of Subpart F of this part.

(c) Engine families for which the manufacturer opts to conduct in-use testing pursuant to subpart M of this part are exempt from this subpart, but shall remain subject to the Selective Enforcement Auditing procedures of Subpart F of this part.

#### **§ 90.702 Definitions.**

The definitions in subpart A of this part apply to this subpart. The following definitions also apply to this subpart.

*Configuration* means any subclassification of an engine family which can be described on the basis of gross power, emission control system, governed speed, injector size, engine calibration, and other parameters as designated by the Administrator.

*Test sample* means the collection of engines selected from the population of an engine family for emission testing.

**§ 90.703 Production line testing by the manufacturer.**

(a) Manufacturers of small SI engines shall test production line engines from each engine family according to the provisions of this subpart.

(b) Production line engines must be tested using the test procedure specified in subpart E of this part except that the Administrator may approve minor variations that the Administrator deems necessary to facilitate efficient and economical testing where the manufacturer demonstrates to the satisfaction of the Administrator that such variations will not significantly impact the test results. Any adjustable engine parameter must be set to values or positions that are within the range recommended to the ultimate purchaser, unless otherwise specified by the Administrator. The Administrator may specify values within or without the range recommended to the ultimate purchaser.

**§ 90.704 Maintenance of records; submission of information.**

(a) The manufacturer of any new small SI engine subject to any of the provisions of this subpart must establish, maintain, and retain the following adequately organized and indexed records:

(1) General records. A description of all equipment used to test engines in accordance with § 90.703. Subpart D of this part sets forth relevant equipment requirements in §§ 90.304, 90.305, 90.306, 90.307, 90.308, 90.309, 90.310 and 90.313.

(2) Individual records. These records pertain to each production line test conducted

pursuant to this subpart and include:

- (i) The date, time, and location of each test;
  - (ii) The number of hours of service accumulated on the test engine when the test began and ended;
  - (iii) The names of all supervisory personnel involved in the conduct of the production line test;
  - (iv) A record and description of any adjustment, repair, preparation or modification performed prior to and/or subsequent to approval by the Administrator pursuant to § 90.707(b)(1), giving the date, associated time, justification, name(s) of the authorizing personnel, and names of all supervisory personnel responsible for the conduct of the repair;
  - (v) If applicable, the date the engine was shipped from the assembly plant, associated storage facility or port facility, and the date the engine was received at the testing facility;
  - (vi) A complete record of all emission tests performed pursuant to this subpart (except tests performed directly by EPA), including all individual worksheets and/or other documentation relating to each test, or exact copies thereof, in accordance with the record requirements specified in §§90.405 and 90.406; and
  - (vii) A brief description of any significant events during testing not otherwise described under paragraph (a)(2) of this section, commencing with the test engine selection process and including such extraordinary events as engine damage during shipment.
- (3) The manufacturer must establish, maintain and retain general records, pursuant to paragraph (a)(1) of this section, for each test cell that can be used to perform emission testing under this subpart.

(b) The manufacturer must retain all records required to be maintained under this subpart for a period of one year after completion of all testing required for the engine family in a model year. Records may be retained as hard copy (i.e., on paper) or reduced to microfilm, floppy disk, or some other method of data storage, depending upon the manufacturer's record retention procedure; provided, that in every case, all the information contained in the hard copy is retained.

(c) The manufacturer must, upon request by the Administrator, submit the following information with regard to engine production:

(1) Projected production or actual production for each engine configuration within each engine family for which certification has been requested and/or approved;

(2) Number of engines, by configuration and assembly plant, scheduled for production or actually produced.

(d) Nothing in this section limits the Administrator's discretion to require a manufacturer to establish, maintain, retain or submit to EPA information not specified by this section and otherwise permitted by law.

(e) All reports, submissions, notifications, and requests for approval made under this subpart must be addressed to: Manager, Engine Compliance Programs Group (6403J), U.S. Environmental Protection Agency, Washington, DC 20460.

(f) The manufacturer must electronically submit the results of its production line testing using EPA's standardized format. The Administrator may exempt manufacturers from this requirement upon written request with supporting justification.

**§ 90.705 Right of entry and access.**



(a) To allow the Administrator to determine whether a manufacturer is complying with the provisions of this subpart or other subparts of this part, one or more EPA enforcement officers may enter during operating hours and upon presentation of credentials any of the following places:

- (1) Any facility, including ports of entry, where any engine to be introduced into commerce or any emission-related component is manufactured, assembled, or stored;
- (2) Any facility where any test conducted pursuant to this or any other subpart or any procedure or activity connected with such test is or was performed;
- (3) Any facility where any test engine is present; and
- (4) Any facility where any record required under § 90.704 or other document relating to this subpart or any other subpart of this part is located.

(b) Upon admission to any facility referred to in paragraph (a) of this section, EPA enforcement officers are authorized to perform the following inspection-related activities:

- (1) To inspect and monitor any aspect of engine manufacture, assembly, storage, testing and other procedures, and to inspect and monitor the facilities in which these procedures are conducted;
- (2) To inspect and monitor any aspect of engine test procedures or activities, including test engine selection, preparation and service accumulation, emission test cycles, and maintenance and verification of test equipment calibration;
- (3) To inspect and make copies of any records or documents related to the assembly, storage, selection, and testing of an engine; and
- (4) To inspect and photograph any part or aspect of any engine and any component used

in the assembly thereof that is reasonably related to the purpose of the entry.

(c) EPA enforcement officers are authorized to obtain reasonable assistance without cost from those in charge of a facility to help the officers perform any function listed in this subpart and they are authorized to request the manufacturer to make arrangements with those in charge of a facility operated for the manufacturer's benefit to furnish reasonable assistance without cost to EPA.

(1) Reasonable assistance includes, but is not limited to, clerical, copying, interpretation and translation services; the making available on an EPA enforcement officer's request of personnel of the facility being inspected during their working hours to inform the EPA enforcement officer of how the facility operates and to answer the officer's questions; and the performance on request of emission tests on any engine which is being, has been, or will be used for production line or other testing.

(2) By written request, signed by the Assistant Administrator for Air and Radiation, and served on the manufacturer, a manufacturer may be compelled to cause the personal appearance of any employee at such a facility before an EPA enforcement officer. Any such employee who has been instructed by the manufacturer to appear will be entitled to be accompanied, represented, and advised by counsel.

(d) EPA enforcement officers are authorized to seek a warrant or court order authorizing the EPA enforcement officers to conduct the activities authorized in this section, as appropriate, to execute the functions specified in this section. EPA enforcement officers may proceed ex parte to obtain a warrant or court order whether or not the EPA enforcement officers first attempted to seek permission from the manufacturer or the party in charge of the facility(ies) in

question to conduct the activities authorized in this section.

(e) A manufacturer must permit an EPA enforcement officer(s) who presents a warrant or court order to conduct the activities authorized in this section as described in the warrant or court order. The manufacturer must also cause those in charge of its facility or a facility operated for its benefit to permit entry and access as authorized in this section pursuant to a warrant or court order whether or not the manufacturer controls the facility. In the absence of a warrant or court order, an EPA enforcement officer(s) may conduct the activities authorized in this section only upon the consent of the manufacturer or the party in charge of the facility(ies) in question.

(f) It is not a violation of this part or the Clean Air Act for any person to refuse to permit an EPA enforcement officer(s) to conduct the activities authorized in this section if the officer(s) appears without a warrant or court order.

(g) A manufacturer is responsible for locating its foreign testing and manufacturing facilities in jurisdictions where local law does not prohibit an EPA enforcement officer(s) from conducting the entry and access activities specified in this section. EPA will not attempt to make any inspections which it has been informed local foreign law prohibits.

#### **§ 90.706 Engine sample selection.**

(a) At the start of each model year, the small SI engine manufacturer will begin to randomly select engines from each engine family for production line testing at a rate of one percent of the projected production of that family. Each engine will be selected from the end of the assembly line.

(1) For newly certified engine families: After two engines are tested, the manufacturer

will calculate the required sample size for the model year for each pollutant (HC+NO<sub>x</sub>(NMHC+NO<sub>x</sub>) and CO) according to the Sample Size Equation in paragraph (b) of this section.

(2) For carry-over engine families: After one engine is tested, the manufacturer will combine the test with the last test result from the previous model year and then calculate the required sample size for the model year for each pollutant according to the Sample Size Equation in paragraph (b) of this section.

(b)(1) Manufacturers will calculate the required sample size for the model year for each pollutant for each engine family using the Sample Size Equation in this paragraph. N is calculated for each pollutant from each test result. The higher of the two values for the number N indicates the number of tests required for the model year for an engine family. N is recalculated for each pollutant after each test. Test results used to calculate the variables in the following Sample Size Equation must be final deteriorated test results as specified in §90.709(c).

$$N = \left[ \frac{(t_{95} * \sigma)^2}{(x - FEL)} \right] + 1$$

Where:

N = required sample size for the model year.

t<sub>95</sub> = 95% confidence coefficient. It is dependent on the actual number of tests

completed, n, as specified in the table in paragraph (b)(2) of this section.

It defines one-tail, 95% confidence intervals.

$\sigma$  = actual test sample standard deviation calculated from the following equation:

$$\sigma = \sqrt{\frac{\sum (X_i - x)^2}{n - 1}}$$

$x_i$  = emission test result for an individual engine.

$x$  = mean of emission test results of the actual sample.

FEL = Family Emission Limit or standard if no FEL.

$n$  = The actual number of tests completed in an engine family.

(2) The following table specifies the Actual Number of Tests (n) & 1-tail Confidence Coefficients ( $t_{95}$ ):

n	t <sub>95</sub>	n	t <sub>95</sub>	n	t <sub>95</sub>
2	6.31	12	1.80	22	1.72
3	2.92	13	1.78	23	1.72
4	2.35	14	1.77	24	1.71
5	2.13	15	1.76	25	1.71
6	2.02	16	1.75	26	1.71
7	1.94	17	1.75	27	1.71
8	1.90	18	1.74	28	1.70
9	1.86	19	1.73	29	1.70
10	1.83	20	1.73	30	1.70
11	1.81	21	1.72	∞	1.645

(3) A manufacturer must distribute the testing of the remaining number of engines needed to meet the required sample size N, evenly throughout the remainder of the model year.

(4) After each new test, the required sample size, N, is recalculated using updated sample means, sample standard deviations and the appropriate 95% confidence coefficient.

(5) A manufacturer must continue testing and updating each engine family's sample size calculations according to paragraphs (b)(1) through (b)(4) of this section until a decision is made to stop testing as described in paragraph (b)(6) of this section or a noncompliance decision is made pursuant to §90.710(b).

(6) If, at any time throughout the model year, the calculated required sample size, N, for an engine family is less than or equal to the actual sample size, n, and the sample mean,  $\bar{x}$ , for

HC + NO<sub>x</sub> (NMHC+NO<sub>x</sub>) and CO is less than or equal to the FEL or standard if no FEL, the manufacturer may stop testing that engine family.

(7) If, at any time throughout the model year, the sample mean,  $\bar{x}$ , for HC + NO<sub>x</sub> (NMHC+NO<sub>x</sub>) or CO is greater than the FEL or standard if no FEL, the manufacturer must continue testing that engine family at the appropriate maximum sampling rate.

(8) The maximum required sample size for an engine family (regardless of the required sample size,  $N$ , as calculated in paragraph (b)(1) of this section) is the lesser of thirty tests per model year or one percent of projected annual production for that engine family for that model year.

(9) Manufacturers may elect to test additional engines. Additional engines, whether tested in accordance with the testing procedures specified in § 90.707 or not, may not be included in the Sample Size and Cumulative Sum equation calculations as defined in paragraph (b)(1) of this section and §90.708(a), respectively. However, such additional test results may be used as appropriate to “bracket” or define the boundaries of the production duration of any emission nonconformity determined under this subpart. Such additional test data must be identified and provided to EPA with the submittal of the official CumSum results.

(c) The manufacturer must produce and assemble the test engines using its normal production and assembly process for engines to be distributed into commerce.

(d) No quality control, testing, or assembly procedures shall be used on any test engine or any portion thereof, including parts and subassemblies, that have not been or will not be used during the production and assembly of all other engines of that family, unless the Administrator approves the modification in production or assembly procedures in advance.

**§ 90.707 Test procedures.**

(a)(1) For small SI engines subject to the provisions of this subpart, the prescribed test procedures are specified in subpart E of this part.

(2) The Administrator may, on the basis of a written application by a manufacturer, prescribe test procedures other than those specified in paragraph (a)(1) of this section for any small SI engine the Administrator determines is not susceptible to satisfactory testing using procedures specified in paragraph (a)(1) of this section.

(b)(1) The manufacturer may not adjust, repair, prepare, or modify any test engine and may not perform any emission test on any test engine unless this adjustment, repair, preparation, modification and/or test is documented in the manufacturer's engine assembly and inspection procedures and is actually performed by the manufacturer on every production line engine or unless this adjustment, repair, preparation, modification and/or test is required or permitted under this subpart or is approved in advance by the Administrator.

(2) The Administrator may adjust or cause to be adjusted any engine parameter which the Administrator has determined to be subject to adjustment for certification, Production Line Testing and Selective Enforcement Audit testing, to any setting within the physically adjustable range of that parameter, as determined by the Administrator, prior to the performance of any test. However, if the idle speed parameter is one which the Administrator has determined to be subject to adjustment, the Administrator may not adjust it or require that it be adjusted to any setting which causes a lower engine idle speed than would have been possible within the physically adjustable range of the idle speed parameter if the manufacturer had accumulated 12 hours of



service on the engine under paragraph (c) of this section, all other parameters being identically adjusted for the purpose of the comparison. The manufacturer may be requested to supply information necessary to establish an alternate minimum idle speed. The Administrator, in making or specifying these adjustments, may consider the effect of the deviation from the manufacturer's recommended setting on emission performance characteristics as well as the likelihood that similar settings will occur on in-use engines. In determining likelihood, the Administrator may consider factors such as, but not limited to, the effect of the adjustment on engine performance characteristics and information from similar in-use engines.

(c) Service Accumulation. (1) Unless otherwise approved by the Administrator, prior to performing exhaust emission production line testing, the manufacturer may accumulate up to 12 hours of service on each test engine. For catalyst-equipped engines, the manufacturer must accumulate a number of hours equal to the number of hours accumulated to represent stabilized emissions on the engine used to obtain certification.

(2) Service accumulation must be performed in a manner using good engineering judgment to obtain emission results representative of production line engines.

(d) Unless otherwise approved by the Administrator, the manufacturer may not perform any maintenance on test engines after selection for testing.

(e) If an engine is shipped to a remote facility for production line testing, and an adjustment or repair is necessary because of shipment, the engine manufacturer must perform the necessary adjustment or repair only after the initial test of the engine, except in cases where the Administrator has determined that the test would be impossible or unsafe to perform or would permanently damage the engine. Engine manufacturers must report to the Administrator, in the

quarterly report required by § 90.709(e), all adjustments or repairs performed on test engines prior to each test.

(f) If an engine cannot complete the service accumulation or an emission test because of a malfunction, the manufacturer may request that the Administrator authorize either the repair of that engine or its deletion from the test sequence.

(g) Testing. A manufacturer must test engines with the test procedure specified in subpart E of this part to demonstrate compliance with the applicable FEL (or standard where there is no FEL). If alternate or special test procedures pursuant to regulations at §90.120 are used in certification, then those alternate procedures must be used in production line testing.

(h) Retesting. (1) If an engine manufacturer reasonably determines that an emission test of an engine is invalid because of a procedural error, test equipment problem, or engine performance problem that causes the engine to be unable to safely perform a valid test, the engine may be retested. A test is not invalid simply because the emission results are high relative to other engines of the family. Emission results from all tests must be reported to EPA. The engine manufacturer must also include a detailed explanation of the reasons for invalidating any test in the quarterly report required in §90.709(e). If a test is invalidated because of an engine performance problem, the manufacturer must document in detail the nature of the problem and the repairs performed in order to use the after-repair test results for the original test results.

(2) Routine retests may be conducted if the manufacturer conducts the same number of tests on all engines in the family. The results of these tests must be averaged according to procedures of §90.709.

**§ 90.708 Cumulative Sum (CumSum) Procedure.**

(a) (1) Manufacturers must construct separate CumSum Equations for each regulated pollutant (HC+NO<sub>x</sub> (NMHC+NO<sub>x</sub>) and CO) for each engine family. Test results used to calculate the variables in the CumSum Equations must be final deteriorated test results as defined in §90.709(c). The CumSum Equation is constructed as follows:

$$C_i = \max[0, (C_{i-1} + X_i - (FEL + F))]$$

Where:

$C_i$  = The current CumSum statistic.

$C_{i-1}$  = The previous CumSum statistic. Prior to any testing, the CumSum statistic = 0 (i.e.  $C_0 = 0$ ).

$X_i$  = The current emission test result for an individual engine.

FEL = Family Emission Limit (the standard if no FEL).

F =  $0.25 \times \sigma$ .

(2) After each test pursuant to paragraph (a)(1) of this section,  $C_i$  is compared to the

action limit,  $H$ , the quantity which the CumSum statistic must exceed, in two consecutive tests, before the engine family may be determined to be in noncompliance for a regulated pollutant for purposes of § 90.710.

Where:

$H$  = The Action Limit. It is  $5.0 \times \sigma$ , and is a function of the standard deviation,  $\sigma$ .

$\sigma$  = is the sample standard deviation and is recalculated after each test.

(b) After each engine is tested, the CumSum statistic shall be promptly updated according to the CumSum Equation in paragraph (a) of this section.

(c)(1) If, at any time during the model year, a manufacturer amends the application for certification for an engine family as specified in § 90.122(a) by performing an engine family modification (i.e. a change such as a running change involving a physical modification to an engine, a change in specification or setting, the addition of a new configuration, or the use of a different deterioration factor) with no changes to the FEL (where applicable), all previous sample size and CumSum statistic calculations for the model year will remain unchanged.

(2) If, at any time during the model year, a manufacturer amends the application for certification for an engine family as specified in § 90.122 (a) by modifying its FEL (where applicable) for future production, as a result of an engine family modification, the manufacturer must continue its calculations by inserting the new FEL into the sample size equation as

specified in § 90.706(b)(1) and into the CumSum equation in paragraph (a) of this section. All previous calculations remain unchanged. If the sample size calculation indicates that additional tests are required, then those tests must be performed. CumSum statistic calculations must not indicate that the family has exceeded the action limit for two consecutive tests. Where applicable, the manufacturer's final credit report as required by § 90.210 must break out the credits that result from each FEL and corresponding CumSum analysis for the set of engines built to each FEL.

(3) If, at any time during the model year, a manufacturer amends the application for certification for an engine family as specified in § 90.122 (a) (or for an affected part of the year's production in cases where there were one or more mid-year engine family modifications), by modifying its FEL (where applicable) for past and/or future production, without performing an engine modification, all previous sample size and CumSum statistic calculations for the model year must be recalculated using the new FEL. If the sample size calculation indicates that additional tests are required, then those tests must be performed. The CumSum statistic recalculation must not indicate that the family has exceeded the action limit for two consecutive tests. Where applicable, the manufacturer's final credit report as required by § 90.210 must break out the credits that result from each FEL and corresponding CumSum analysis for the set of engines built to each FEL.

#### **§ 90.709 Calculation and reporting of test results.**

(a) Initial test results are calculated following the applicable test procedure specified in § 90.707 (a). The manufacturer rounds these results to the number of decimal places contained

in the applicable emission standard expressed to one additional significant figure.

(b) Final test results are calculated by summing the initial test results derived in paragraph (a) of this section for each test engine, dividing by the number of tests conducted on the engine, and rounding to the same number of decimal places contained in the applicable standard expressed to one additional significant figure.

(c) The final deteriorated test results for each test engine are calculated by applying the appropriate deterioration factors, derived in the certification process for the engine to the final test results, and rounding to the same number of decimal places contained in the applicable standard.

(d) If, at any time during the model year, the CumSum statistic exceeds the applicable action limit, H, in two consecutive tests for any regulated pollutant, (HC+NO<sub>x</sub> (NMHC+NO<sub>x</sub>) or CO) the engine family may be determined to be in noncompliance and the manufacturer must notify EPA by contacting its official EPA certification representative within ten working days of such exceedance by the Cum Sum statistic.

(e) Within 45 calendar days of the end of each quarter, each engine manufacturer must submit to the Administrator a report which includes the following information:

- (1) The location and description of the manufacturer's or other's exhaust emission test facilities which were utilized to conduct testing reported pursuant to this section;
- (2) Total production and sample sizes, N and n, for each engine family;
- (3) The FEL (standard, if no FEL) against which each engine family was tested;
- (4) A description of the process to obtain engines on a random basis;
- (5) A description of the test engines;

- (6) For each test conducted:
- (i) A description of the test engine, including:
    - (A) Configuration and engine family identification;
    - (B) Year, make, and build date;
    - (C) Engine identification number; and
    - (D) Number of hours of service accumulated on engine prior to testing;
  - (ii) Location where service accumulation was conducted and description of accumulation procedure and schedule;
  - (iii) Test number, date, test procedure used, initial test results before and after rounding, final test results before and after rounding and final deteriorated test results for all exhaust emission tests, whether valid or invalid, and the reason for invalidation, if applicable;
  - (iv) A complete description of any adjustment, modification, repair, preparation, maintenance, and/or testing which was performed on the test engine, was not reported pursuant to any other paragraph of this subpart, and will not be performed on all other production engines;
  - (v) A CumSum analysis, as required in § 90.708, of the production line test results for each engine family; and
  - (vi) Any other information the Administrator may request relevant to the determination whether the new engines being manufactured by the manufacturer do in fact conform with the regulations with respect to which the certificate of conformity was issued;
- (7) For each failed engine as defined in § 90.710(a), a description of the remedy and test results for all retests as required by §90.711(g);
- (8) The date of the end of the engine manufacturer's model year production for each

engine family; and

(9) The following signed statement and endorsement by an authorized representative of the manufacturer:

This report is submitted pursuant to Sections 213 and 208 of the Clean Air Act. This production line testing program was conducted in complete conformance with all applicable regulations under 40 CFR Part 90. No emission-related changes to production processes or quality control procedures for the engine family tested have been made during this production line testing program that affect engines from the production line. All data and information reported herein is, to the best of (Company Name) knowledge, true and accurate. I am aware of the penalties associated with violations of the Clean Air Act and the regulations thereunder. (Authorized Company Representative.)

**§ 90.710 Compliance with criteria for production line testing.**

(a) A failed engine is one whose final deteriorated test results pursuant to § 90.709(c), for HC + NO<sub>x</sub> (NMHC+NO<sub>x</sub>) or CO exceeds the applicable Family Emission Limit (FEL) or standard if no FEL.

(b) An engine family shall be determined to be in noncompliance, if at any time throughout the model year, the CumSum statistic,  $C_i$ , for HC + NO<sub>x</sub> (NMHC+NO<sub>x</sub>) or CO, is greater than the action limit, H, for that pollutant, for two consecutive tests.

**§ 90.711 Suspension and revocation of certificates of conformity.**



(a) The certificate of conformity is suspended with respect to any engine failing pursuant to § 90.710(a) effective from the time that testing of that engine is completed.

(b) The Administrator may suspend the certificate of conformity for an engine family which is determined to be in noncompliance pursuant to § 90.710(b). This suspension will not occur before thirty days after the engine family is determined to be in noncompliance and the Administrator has notified the manufacturer of its intent to suspend. During this thirty day period the Administrator will work with the manufacturer to achieve appropriate production line changes to avoid the need to halt engine production, if possible. The Administrator will approve or disapprove any such production line changes proposed to address a family that has been determined to be in noncompliance under this subpart within 15 days of receipt. If the Administrator does not approve or disapprove such a proposed change within such time period, the proposed change shall be considered approved.

(c) If the results of testing pursuant to these regulations indicate that engines of a particular family produced at one plant of a manufacturer do not conform to the regulations with respect to which the certificate of conformity was issued, the Administrator may suspend the certificate of conformity with respect to that family for engines manufactured by the manufacturer at all other plants.

(d) Notwithstanding the fact that engines described in the application for certification may be covered by a certificate of conformity, the Administrator may suspend such certificate immediately in whole or in part if the Administrator finds any one of the following infractions to be substantial:

(1) The manufacturer refuses to comply with any of the requirements of this subpart.

(2) The manufacturer submits false or incomplete information in any report or information provided to the Administrator under this subpart.

(3) The manufacturer renders inaccurate any test data submitted under this subpart.

(4) An EPA enforcement officer is denied the opportunity to conduct activities authorized in this subpart and a warrant or court order is presented to the manufacturer or the party in charge of the facility in question.

(5) An EPA enforcement officer is unable to conduct activities authorized in § 90.705 because a manufacturer has located its facility in a foreign jurisdiction where local law prohibits those activities.

(e) The Administrator shall notify the manufacturer in writing of any suspension or revocation of a certificate of conformity in whole or in part, except that the certificate is immediately suspended with respect to any failed engines as provided for in paragraph (a) of this section.

(f) The Administrator may revoke a certificate of conformity for an engine family after the certificate has been suspended pursuant to paragraph (b) or (c) of this section if the proposed remedy for the nonconformity, as reported by the manufacturer to the Administrator, is one requiring a design change or changes to the engine and/or emission control system as described in the application for certification of the affected engine family.

(g) Once a certificate has been suspended for a failed engine, as provided for in paragraph (a) of this section, the manufacturer must take the following actions before the certificate is reinstated for that failed engine:

(1) Remedy the nonconformity;

(2) Demonstrate that the engine conforms to the applicable standards (FELs, where applicable) by retesting the engine in accordance with these regulations; and

(3) Submit a written report to the Administrator, described in § 90.709(e)(7), after successful completion of testing on the failed engine, which contains a description of the remedy and test results for each engine in addition to other information that may be required by this part.

(h) Once a certificate for a failed engine family has been suspended pursuant to paragraph (b) or (c) of this section, the manufacturer must take the following actions before the Administrator will consider reinstating the certificate:

(1) Submit a written report to the Administrator which identifies the reason for the noncompliance of the engines, describes the proposed remedy, including a description of any proposed quality control and/or quality assurance measures to be taken by the manufacturer to prevent future occurrences of the problem, and states the date on which the remedies will be implemented; and

(2) Demonstrate that the engine family for which the certificate of conformity has been suspended does in fact comply with the regulations of this part by testing as many engines as needed so that the CumSum statistic, as calculated in § 90.708(a), falls below the action limit. Such testing must comply with the provisions of this part. If the manufacturer elects to continue testing individual engines after suspension of a certificate, the certificate is reinstated for any engine actually determined to be in conformance with the Family Emission Limits (or standards if no FEL) through testing in accordance with the applicable test procedures, provided that the Administrator has not revoked the certificate pursuant to paragraph (f) of this section.

(i) Once the certificate has been revoked for an engine family, if the manufacturer desires

to continue introduction into commerce of a modified version of that family, the following actions must be taken before the Administrator may issue a certificate for that modified family:

(1) If the Administrator determines that the proposed change(s) in engine design may have an effect on emission performance deterioration, the Administrator shall notify the manufacturer within five working days after receipt of the report in paragraph (h)(1) of this section whether subsequent testing under this subpart will be sufficient to evaluate the proposed change or changes or whether additional testing will be required;

(2) After implementing the change or changes intended to remedy the nonconformity, the manufacturer must demonstrate that the modified engine family does in fact conform with the regulations of this part by testing as many engines as needed from the modified engine family so that the CumSum statistic, as calculated in § 90.708(a) using the newly assigned FEL if applicable, falls below the action limit; and

(3) When the requirements of paragraphs (i)(1) and (i)(2) of this section are met, the Administrator shall reissue the certificate or issue a new certificate, as the case may be, to include that family. As long as the CumSum statistic remains above the action limit, the revocation remains in effect.

(j) At any time subsequent to a suspension of a certificate of conformity for a test engine pursuant to paragraph (a) of this section, but not later than 15 days (or such other period as may be allowed by the Administrator) after notification of the Administrator's decision to suspend or revoke a certificate of conformity in whole or in part pursuant to paragraph (b), (c), or (f) of this section, a manufacturer may request a hearing as to whether the tests have been properly conducted or any sampling methods have been properly applied.

(k) Any suspension of a certificate of conformity under paragraph (d) of this section shall:

(1) Be made only after the manufacturer concerned has been offered an opportunity for a hearing conducted in accordance with §§ 90.712 and 90.713; and

(2) Not apply to engines no longer in the possession of the manufacturer.

(l) After the Administrator suspends or revokes a certificate of conformity pursuant to this section and prior to the commencement of a hearing under §90.712, if the manufacturer demonstrates to the Administrator's satisfaction that the decision to suspend or revoke the certificate was based on erroneous information, the Administrator shall reinstate the certificate.

(m) To permit a manufacturer to avoid storing non-test engines while conducting subsequent testing of the noncomplying family, a manufacturer may request that the Administrator conditionally reinstate the certificate for that family. The Administrator may reinstate the certificate subject to the following condition: the manufacturer must commit to performing offsetting measures that remedy the nonconformity at no expense to the owners, and which are approved in advance by the Administrator for all engines of that family produced from the time the certificate is conditionally reinstated if the CumSum statistic does not fall below the action limit.

#### **§ 90.712 Request for public hearing.**

(a) If the manufacturer disagrees with the Administrator's decision to suspend or revoke a certificate or disputes the basis for an automatic suspension pursuant to § 90.711(a), the manufacturer may request a public hearing.

(b) The manufacturer's request shall be filed with the Administrator not later than 15 days

after the Administrator's notification of his or her decision to suspend or revoke, unless otherwise specified by the Administrator. The manufacturer shall simultaneously serve two copies of this request upon the Manager of the Engine Compliance Programs Group and file two copies with the Hearing Clerk for the Agency. Failure of the manufacturer to request a hearing within the time provided constitutes a waiver of the right to a hearing. Subsequent to the expiration of the period for requesting a hearing as of right, the Administrator may, in his or her discretion and for good cause shown, grant the manufacturer a hearing to contest the suspension or revocation.

(c) A manufacturer shall include in the request for a public hearing:

(1) A statement as to which engine configuration(s) within a family is to be the subject of the hearing; and

(2) A concise statement of the issues to be raised by the manufacturer at the hearing, except that in the case of the hearing requested under § 90.711(j), the hearing is restricted to the following issues:

(i) Whether tests have been properly conducted (specifically, whether the tests were conducted in accordance with applicable regulations under this part and whether test equipment was properly calibrated and functioning);

(ii) Whether sampling plans and statistical analyses have been properly applied (specifically, whether sampling procedures and statistical analyses specified in this subpart were followed and whether there exists a basis for distinguishing engines produced at plants other than the one from which engines were selected for testing which would invalidate the Administrator's decision under § 90.711(c));

(3) A statement specifying reasons why the manufacturer believes it will prevail on the

merits of each of the issues raised; and

(4) A summary of the evidence which supports the manufacturer's position on each of the issues raised.

(d) A copy of all requests for public hearings will be kept on file in the Office of the Hearing Clerk and will be made available to the public during Agency business hours.

**§ 90.713 Administrative procedures for public hearing.**

The administrative procedures for a public hearing requested under this subpart shall be those procedures set forth in the regulations found at §§ 90.513 through 90.516. References in §90.513 to §90.511(j), §90.512(c)(2), §90.511(e), §90.512, §90.511(d), §90.503, §90.512(c) and §90.512(b) shall be deemed to refer to §90.711(j), §90.712(c)(2), §90.711(e), §90.712, §90.711(d), §90.703, and §90.712(c) and §90.712(b), respectively. References to “test orders” in §90.513 can be ignored.

33. Subpart I is amended by revising the subpart heading to read as follows:

**Subpart I--Emission-related Defect Reporting Requirements, Voluntary Emission Recall Program, Ordered Recalls**

34. Section 90.801 is amended by designating the existing text as paragraph (a) and adding paragraphs (b), (c), (d), (e), (f) and (g) to read as follows:

**§ 90.801 Applicability.**

\* \* \* \* \*

(b) Phase 2 engines subject to provisions of subpart B of this part are subject to recall regulations specified in 40 CFR part 85, subpart S, except as otherwise provided in this section.

(c) Reference to section 214 of the Clean Air Act in 40 CFR 85.1801 (a) is deemed to be a reference to section 216 of the Clean Air Act.

(d) Reference to section 202 of the Act in 40 CFR 85.1802(a) is deemed to be a reference to section 213 of the Act.

(e) Reference to "family particulate emission limits" as defined in part 86 promulgated under section 202 of the Act" in 40 CFR 85.1803(a) and 85.1805(a)(1) is deemed to be a reference to "family emission limits" as defined in Subpart C of this Part 90 promulgated under section 213 of the Act".

(f) Reference to "vehicles or engines" throughout 40 CFR part 85, subpart S is deemed to be reference to "Phase 2 nonroad small SI engines at or below 19 kW."

(g) In addition to the requirements in 40 CFR 85.1805 (a)(9) for Phase 2 engines include



a telephone number provided by the manufacturer, which may be used to report difficulty in obtaining recall repairs.

35. Section 90.802 is amended by adding a sentence at the end of the introductory text to read as follows:

**§ 90.802 Definitions.**

\*\*\*The definitions of 40 CFR 85.1801 also apply to this part.

\* \* \* \* \*

36. Section 90.803 is amended by revising paragraph (c) to read as follows:

**§ 90.803 Emission defect information report.**

\* \* \* \* \*

(c) The manufacturer must submit defect information reports to EPA's Engine Compliance Programs Group not more than 15 working days after an emission-related defect is found to affect 25 or more engines manufactured in the same certificate or model year. Information required by paragraph (d) of this section that is either not available within 15 working days or is significantly revised must be submitted to EPA's Engine Compliance Programs Group as it becomes available.

\* \* \* \* \*

37. Section 90.805 is amended by revising paragraph (a) to read as follows:

**§ 90.805 Reports, voluntary recall plan filing, record retention.**

(a) Send the defect report, voluntary recall plan, and the voluntary recall progress report to:  
Group Manager, Engine Compliance Programs Group, (6403-J), Environmental Protection  
Agency, Washington, D.C. 20460.

\* \* \* \* \*

38. A new § 90.808 is added to subpart I read as follows

**§ 90.808 Ordered recall provisions.**

(a) Effective with respect to Phase 2 small SI engines:

(1) If the Administrator determines that a substantial number of any class or category of engines, although properly maintained and used, do not conform to the regulations prescribed under section 213 of the Act when in actual use throughout their useful life (as defined under §90.105), the Administrator shall immediately notify the manufacturer of such nonconformity and require the manufacturer to submit a plan for remedying the nonconformity of the engines with respect to which such notification is given.

(i) The manufacturer's plan shall provide that the nonconformity of any such engines which are properly used and maintained will be remedied at the expense of the manufacturer.

(ii) If the manufacturer disagrees with such determination of nonconformity and so advises the Administrator, the Administrator shall afford the manufacturer and other interested

persons an opportunity to present their views and evidence in support thereof at a public hearing. Unless, as a result of such hearing, the Administrator withdraws such determination of nonconformity, the Administrator shall, within 60 days after the completion of such hearing, order the manufacturer to provide prompt notification of such nonconformity in accordance with paragraph (a)(2) of this section. The manufacturer shall comply in all respects with the requirements of this subpart.

(2) Any notification required to be given by the manufacturer under paragraph (a)(1) of this section with respect to any class or category of engines shall be given to dealers, ultimate purchasers, and subsequent purchasers (if known) in such manner and containing such information as required in subparts I and M of this part.

(3)(i) Prior to an EPA ordered recall, the manufacturer may perform a voluntary emissions recall pursuant to regulations at §90.804. Such manufacturer is subject to the reporting and recordkeeping requirements of §90.805.

(ii) Once EPA determines that a substantial number of engines fail to conform with the requirements of section 213 of the Act or this part, the manufacturer will not have the option of a voluntary recall.

(b) The manufacturer bears all cost obligation a dealer incurs as a result of a requirement imposed by paragraph (a) of this section. The transfer of any such cost obligation from a manufacturer to a dealer through franchise or other agreement is prohibited.

(c) Any inspection of an engine for purposes of paragraph (a)(1) of this section, after its sale to the ultimate purchaser, is to be made only if the owner of such vehicle or engine voluntarily permits such inspection to be made, except as may be provided by any state or local

inspection program.

## **Subpart J--Exclusion and Exemption of Nonroad Engines From Regulations**

39. Section 90.905 is amended by revising paragraph (f) to read as follows:

### **§ 90.905 Testing exemption.**

\* \* \* \* \*

(f) A manufacturer of new nonroad engines may request a testing exemption to cover nonroad engines intended for use in test programs planned or anticipated over the course of a subsequent one-year period. Unless otherwise required by the Director, Engine Programs and Compliance Division, a manufacturer requesting such an exemption need only furnish the information required by paragraphs (a)(1) and (d)(2) of this section along with a description of the recordkeeping and control procedures that will be employed to assure that the engines are used for purposes consistent with § 90.1004(b).

40. Section 90.906 is amended by revising paragraphs (a) introductory text and (a)(3) introductory text to read as follows:

### **§ 90.906 Manufacturer-owned exemption and precertification exemption.**

(a) Any manufacturer owned nonroad engine, as defined by § 90.902, is exempt from § 90.1003, without application, if the manufacturer complies with the following terms and conditions:

\* \* \* \* \*

(3) Unless the requirement is waived or an alternative procedure is approved by the Director, Engine Programs and Compliance Division, the manufacturer must permanently affix a label to each nonroad engine on exempt status. This label should:

\* \* \* \* \*

41. Section 90.909 is amended by revising paragraph (c) to read as follows:

**§ 90.909 Export exemptions.**

\* \* \* \* \*

(c) EPA will maintain a list of foreign countries that have in force nonroad emission standards identical to U.S. EPA standards and have so notified EPA. This list may be obtained by writing to the following address: Group Manager, Engine Compliance Programs Group, Engine Programs and Compliance Division (6403-J), Environmental Protection Agency, Washington, D.C. 20460. New nonroad engines exported to such countries must comply with U.S. EPA certification regulations.

\* \* \* \* \*

42. Section 90.911 is revised to read as follows:

**§ 90.911 Submission of exemption requests.**

Requests for exemption or further information concerning exemptions and/or the exemption request review procedure should be addressed to: Group Manager, Engine

Compliance Programs Group, Engine Programs and Compliance Division (6403J),  
Environmental Protection Agency, Washington, D.C. 20460.

## **Subpart K--Prohibited Acts and General Enforcement Provisions**

43. Section 90.1003 is amended by revising paragraphs (a)(2), (a)(4)(i), (b)(4), and (b)(5) and by redesignating paragraphs (a)(4)(iii) and (a)(4) (iv) as paragraphs (a)(4) (iv) and (a)(4)(v) respectively, and by adding new paragraphs (a)(4)(iii) and (b)(6) to read as follows:

### **§ 90.1003 Prohibited acts.**

(a) \* \* \*

(2) (i) For a person to fail or refuse to permit access to or copying of records or to fail to make reports or provide information required under §90.1004.

(ii) For a person to fail or refuse to permit entry, testing or inspection authorized under §§ 90.126, 90.506, 90.705, 90.1004, or 90.1207.

(iii) For a person to fail or refuse to perform tests or to have tests performed as required under §§ 90.119, 90.504, 90.703, 90.1004, 90.1204.

(iv) For a person to fail to establish or maintain records as required under §§ 90.209, 90.704, 90.805, or 90.1004.

(v) For a person to fail to submit a remedial plan as required under §90.808.

\* \* \* \* \*

(4)\* \* \*

(i) To sell, offer for sale, or introduce or deliver into commerce, a nonroad engine unless the manufacturer has complied with the requirements of §90.1103.

\* \* \* \* \*

(iii) To fail or refuse to comply with the requirements of § 90.808.

\* \* \* \* \*

(b)\* \* \*

(4) Certified nonroad engines shall be used in all equipment or vehicles that are self-propelled, portable, transportable, or are intended to be propelled while performing their function, unless the manufacturer of the equipment or vehicle can prove that the vehicle or equipment will be used in a manner consistent with paragraph (2) of the definition of nonroad engine in §90.3. Nonroad vehicle and equipment manufacturers may continue to use noncertified nonroad engines built prior to the applicable implementation date of the Phase 1 rule until noncertified engine inventories are depleted; further after the applicable implementation of the Phase 2 regulations in this part, nonroad vehicle and equipment manufacturers may continue to use Phase 1 engines until Phase 1 engine inventories are depleted. Stockpiling (i.e., build up of an inventory of uncertified engines or Phase 1 engines beyond normal business practices to avoid or delay compliance with the Phase 1 or Phase 2 regulations in this part, respectively) will be considered a violation of this section.

(5) A new nonroad engine, intended solely to replace an engine in a piece of nonroad equipment that was originally produced with an engine manufactured prior to the applicable implementation date as described in §§ 90.2, 90.103 and 90.106, or with an engine that was originally produced in a model year in which less stringent standards under this part were in

effect, shall not be subject to the requirements of § 90.106 or prohibitions and provisions of paragraphs (a)(1) and (b)(4) of this section provided that:

(i) The engine manufacturer has ascertained that no engine produced by itself or the manufacturer of the engine that is being replaced, if different, and certified to the requirements of this subpart, is available with the appropriate physical or performance characteristics to repower the equipment; and

(ii) The engine manufacturer or its agent takes ownership and possession of the old engine in partial exchange for the replacement engine; and

(iii) The replacement engine is clearly labeled with the following language, or similar alternate language approved in advance by the Administrator: THIS ENGINE DOES NOT COMPLY WITH FEDERAL NONROAD OR ON-HIGHWAY EMISSION REQUIREMENTS. SALE OR INSTALLATION OF THIS ENGINE FOR ANY PURPOSE OTHER THAN AS A REPLACEMENT ENGINE IN A NONROAD VEHICLE OR PIECE OF NONROAD EQUIPMENT WHOSE ORIGINAL ENGINE WAS NOT CERTIFIED, OR WAS CERTIFIED TO LESS STRINGENT EMISSION STANDARDS THAN THOSE THAT APPLY TO THE YEAR OF MANUFACTURE OF THIS ENGINE, IS A VIOLATION OF FEDERAL LAW SUBJECT TO CIVIL PENALTY; and

(iv) Where the replacement engine is intended to replace an engine built after the applicable implementation date of regulations under this part, but built to less stringent emission standards than are currently applicable, the replacement engine shall be identical in all material respects to a certified configuration of the same or later model year as the engine being replaced.

(6)(i) Regulations elsewhere in this part notwithstanding, for three model years after the



phase-in of Class I and Class II Phase 2 standards; i.e. through August 1, 2010 for Class I engines and through model year 2008 for Class II engines, small volume equipment manufacturers as defined in this part may continue to use, and engine manufacturers may continue to supply, engines certified to Phase 1 standards (or identified and labeled by their manufacturer to be identical to engines previously certified under Phase 1 standards), provided the equipment manufacturer has demonstrated to the satisfaction of the Administrator that no certified Phase 2 engine is available with suitable physical or performance characteristics to power a piece of equipment in production prior to the initial effective date of Phase 2 standards, as indicated in 90.103(a). The equipment manufacturer must also certify to the Administrator that the equipment model has not undergone any redesign which could have facilitated conversion of the equipment to accommodate a Phase 2 engine.

(ii) Regulations elsewhere in this part notwithstanding, for the duration of the Phase 2 rule in this part, equipment manufacturers who certify to the Administrator that annual eligible production of a particular model of equipment will not exceed 500 for a Class I model in production prior to August 1, 2007 or a Class II model in production prior to the 2001 model year, may continue to use in that model, and engine manufacturers may continue to supply, engines certified to Phase 1 requirements, (or identified and labeled by their manufacturer to be identical to engines previously certified under Phase 1 standards). To be eligible for this provision, the equipment manufacturer must have demonstrated to the satisfaction of the Administrator that no certified Phase 2 engine is available with suitable physical or performance characteristics to power the equipment. The equipment manufacturer must also certify to the Administrator that the equipment model has not undergone any redesign which could have

facilitated conversion of the equipment to accommodate a Phase 2 engine.

(iii) An equipment manufacturer which is unable to obtain suitable Phase 2 engines and which can not obtain relief under any other provision of this part, may, prior to the date on which the manufacturer would become in noncompliance with the requirement to use Phase 2 engines, apply to the Administrator to be allowed to continue using Phase 1 engines, through August 1, 2008 for Class 1 engines and through the 2006 model year for Class II engines, subject to the following criteria:

(A) the inability to obtain Phase 2 engines is despite the manufacturer's best efforts and is the result of an extraordinary action on the part of the engine manufacturer that was outside the control of and could not be reasonably foreseen by the equipment manufacturer; such as canceled production or shipment, last minute certification failure, unforeseen engine cancellation, plant closing, work stoppage or other such circumstance; and

(B) the inability to market the particular equipment will bring substantial economic hardship to the equipment manufacturer resulting in a major impact on the equipment manufacturer's solvency.

(iv) The written permission from the Administrator to the equipment manufacturer shall serve as permission for the engine manufacturer to provide such Phase 1 engines required by the equipment manufacturers under this paragraph (b)(6) of this section. As Phase 1 engines, these engines are exempt from Production Line Testing requirements under subpart H of this part and in-use testing provisions under subpart M of this part, and are excluded from the certification averaging, banking and trading program of subpart C of this part.

## **Subpart L-- Emission Warranty and Maintenance Instructions**

44. Section 90.1103 is amended by the revising paragraphs (a) and (b) to read as follows:

### **§ 90.1103 Emission warranty, warranty period.**

(a) Warranties imposed by this subpart shall be for the first two years of engine use from the date of sale to the ultimate purchaser.

(b) The manufacturer of each new nonroad engine must warrant to the ultimate purchaser and each subsequent purchaser that the engine is designed, built and equipped so as to conform at the time of sale with applicable regulations under section 213 of the Act, and the engine is free from defects in materials and workmanship which cause such engine to fail to conform with applicable regulations for its warranty period.

\* \* \* \* \*

45. Section 90.1104 is amended by adding paragraph (e) to read as follows:

### **§ 90.1104 Furnishing of maintenance instructions to ultimate purchaser.**

\* \* \* \* \*

(e) If a manufacturer includes in an advertisement a statement respecting the cost or value of emission control devices or systems, the manufacturer shall set forth in the statement the cost or value attributed to these devices or systems by the Secretary of Labor (through the Bureau of

Labor Statistics). The Secretary of Labor, and his or her representatives, has the same access for this purpose to the books, documents, papers, and records of a manufacturer as the Comptroller General has to those of a recipient of assistance for purposes of section 311 of the Act.

46. A new subpart, Subpart M is added to part 90 to read as follows:

**Subpart M - Voluntary In-Use Testing**

Sec.

90.1201 Applicability.

90.1202 Definitions.

90.1203 Voluntary Manufacturer In-use testing program.

90.1204 Maintenance, aging and testing of engines.

90.1205 In-use test program reporting requirements.

90.1206 Reserved.

90.1207 Entry and access.

90.1208 - 90.1249 [Reserved].

**Subpart M - Voluntary In-Use Testing**

**§ 90.1201 Applicability.**

The provisions of this subpart from § 90.1201 through § 90.1249 are applicable to all nonhandheld Phase 2 engines subject to the provisions of subpart A of this part.

**§ 90.1202 Definitions.**

For the purposes of this subpart, except as otherwise provided, the definitions in subparts

A and C of this part apply to this subpart.

**§ 90.1203 Voluntary Manufacturer In-Use Testing Program.**

(a) Manufacturers may elect to participate in the voluntary in-use testing program by notifying the Administrator in writing of their intent to conduct emissions testing on in-use engines prior to the beginning of each model year. The notification must include a list of engine families the manufacturer has selected to include in the testing program.

(b) Each engine family included in the voluntary in-use testing program is exempted from the Production Line Testing requirements according to §90.701(c) for two model years, the current model year and the subsequent model year. Manufacturers may only include up to twenty percent of their eligible engine families in this in-use testing program each model year.

(c) The manufacturer must randomly select or procure a minimum of three engines, from each family included in the voluntary program, for emissions testing. These three engines may be selected or procured from:

- (1) existing consumer or independently owned fleets,
- (2) existing manufacturer owned fleets, or
- (3) the production line and placed into either manufacturer or consumer owned fleets.

Although a minimum of three engines must be emissions tested from each engine family in this testing program, a manufacturer may elect to emissions test more than three engines per family.

(d) The manufacturer or the manufacturer's designee must:

(1) age the selected engines in equipment representing the top 50 percent, by production, of available equipment for the engine family.

(2) age the selected engines to at least 75 percent of each engines' useful life as determined pursuant to § 90.105.

(3) age the engine/equipment combination in actual field conditions encountered with typical use of the equipment as described in the owner's manual or other literature sold with the equipment or engine.

(e) Documents obtained in the procurement or aging process must be maintained as required in § 90.121.

(f) The manufacturer must complete testing within three calendar years from the time they notified the Administrator of their intent to participate in the voluntary in-use testing program, unless otherwise approved by the Administrator; the Administrator will give such approval upon acceptance of documentation demonstrating that appropriate in-use testing will take a longer period of time.

#### **§ 90.1204 Maintenance and testing of engines.**

(a) Prior to aging the engines and after appropriate stabilization, manufacturers may optionally conduct emissions testing on the engines, according to the test procedures described in subpart E of this part. These tests to serve as baseline references.

(b) Manufacturers must obtain information regarding the accumulated usage, maintenance, operating conditions, and storage of the test engines.

(1) The manufacturer may take reasonable measures to assure that the engines and equipment were properly used and maintained during the field aging process, but additional maintenance to that indicated in the owners manual or other literature sold with the equipment or

engine is prohibited.

(2) Unless otherwise approved by the Administrator, once a manufacturer begins aging and/or testing an engine, the manufacturer may not remove that engine from the selected sample unless that engine experiences catastrophic mechanical failure or safety concerns requiring major engine repair.

(c) The manufacturer may perform minimal set-to-spec maintenance on components of a test engine that are not subject to parameter adjustment. Components subject to parameter adjustment must be sealed and tamperproof and may not be adjusted for testing. Unless otherwise approved by the Administrator, maintenance to any test engine may include only that which is listed in the owner's instructions for engines with the amount of service and age of the test engine.

(d) After aging each engine to at least 75 percent of the engine's useful life as determined pursuant to § 90.105, at least one valid emission test, according to the test procedure outlined in subpart E of this part, is required for each test engine. Data from other emission testing or performance testing performed on a test engine must be supplied to EPA, and may not be used for the purpose of determining the need for maintenance on an engine.

(e) Documents obtained in the procurement, aging, maintenance, or testing process must be maintained as required in § 90.121.

#### **§ 90.1205 In-use test program reporting requirements.**

(a) The manufacturer shall submit to the Administrator within ninety (90) days of completion of testing for a given model year's engines, all emission testing results generated



from the voluntary in-use testing program. The following information must be reported for each test engine:

- (1) Engine family;
- (2) Model;
- (3) Application;
- (4) Engine serial number;
- (5) Date of manufacture;
- (6) Hours of use;
- (7) Date and time of each test attempt;
- (8) Results (if any) of each test attempt;
- (9) Schedules, descriptions and justifications of all maintenance and/or adjustments

performed;

- (10) Schedules, descriptions and justifications of all modifications and/or repairs; and

(11) a listing of any test engines that were deleted from the aging process or testing process and technical justifications to support the deletion.

(b) All testing reports and requests for approvals made under this subpart shall be addressed to: Manager, Engine Compliance Programs Group (6403-J), U.S. Environmental Protection Agency, Washington, D.C. 20460.

**§ 90.1206 [Reserved]**

**§ 90.1207 Entry and access.**

(a) To allow the Administrator to determine whether a manufacturer is complying with the provisions under this subpart, EPA enforcement officers or their authorized representatives, upon presentation of credentials, shall be permitted entry, during operating hours, into any of the following places:

(1) Any facility where engines undergo or are undergoing aging, maintenance, repair, preparation for aging, selection for aging or emission testing.

(2) Any facility where records or documents related to any of activities described in paragraph (a)(1) of this section are kept.

(3) Any facility where any engine that is being tested or aged, was tested or aged or will be tested or aged is present.

(b) Upon admission to any facility referred to in paragraph (a) of this section, EPA enforcement officers or EPA authorized representatives are authorized to perform those activities set forth in §90.705 (b) and also to inspect and make copies of records related to engine aging (service accumulation) and maintenance.

(c) The provisions of §90.705(c), (d), (e), (f) and (g) also apply to entry and access under this subpart.

**§ 90.1208 - 90.1249 [Reserved].**